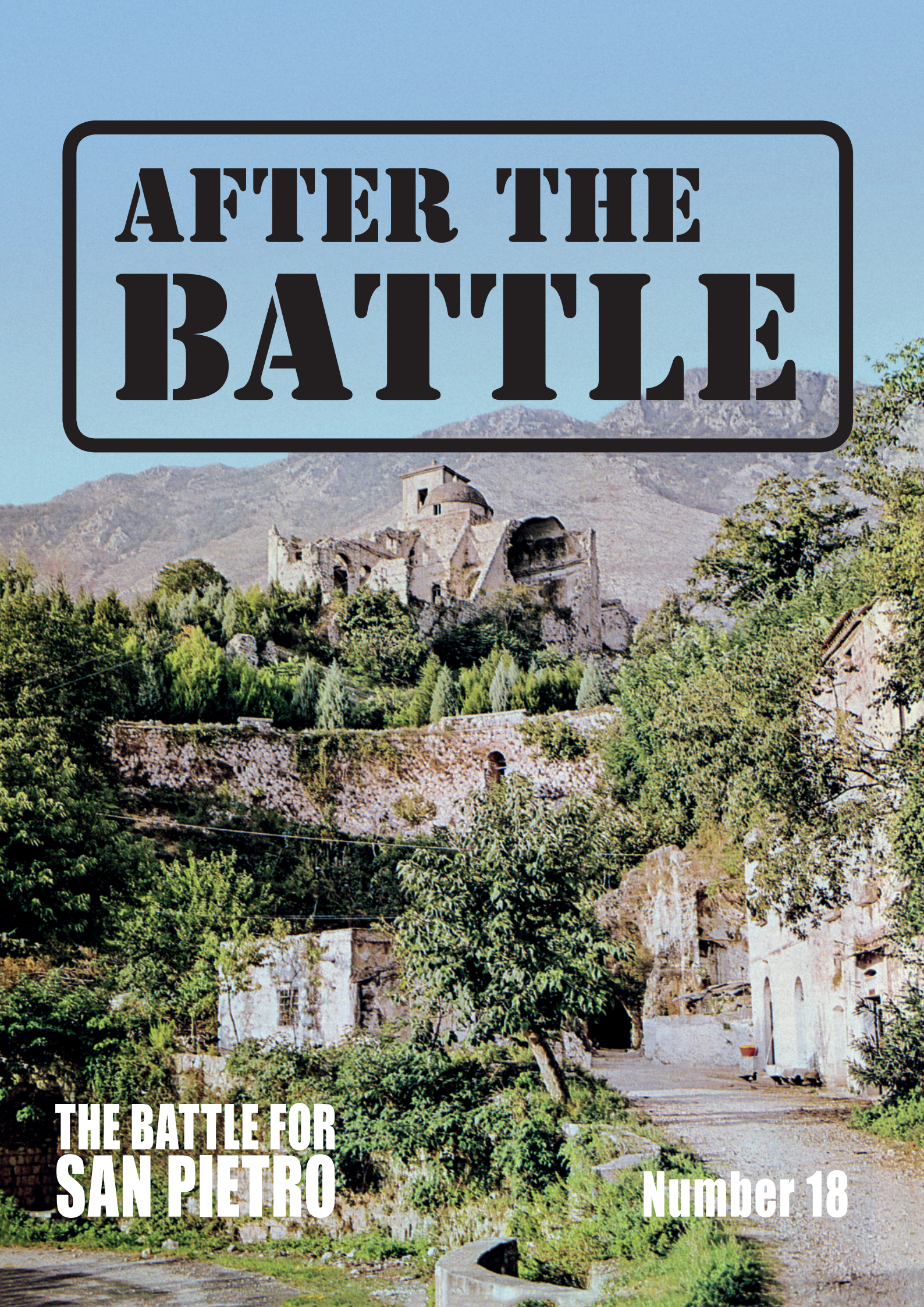
AFTER THE BATTLE



THE BATTLE FOR SAN PIETRO

Number 18

AFTER THE BATTLE

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Edited by Winston G. Ramsey

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CONTENTS

THE BATTLE FOR SAN PIETRO
Reconnaissance 1
The First Attack 2
The Second Attack 4
The Tank Attack 6
The Final Attack 11
San Pietro today 15
WAR FILM
Mosquito Film Stars 19
WRECK DISCOVERY
The Wartime Solomons — thirty years after 22
UNITED KINGDOM
Largest Wartime Explosions
Silvertown, London, 1917 30
Fauld, Staffordshire, 1944 35
IT HAPPENED HERE
Crossing the Seine at Vernon 41
PRESERVATION
RMASC Centaur 50

Cover: San Pietro Infine, Italy with the ruined church of San Michele. Monte Sammucro, scene of much bitter fighting during the battle for the village, is in the background. Photograph taken September 1977.

Back Cover: Display of armour at the Italian War Cemetery at Monte Lungo. L-R M-10 Tank Destroyer, Cannone da 75/27 Model 911, Sherman M4A3 and a Sherman turret with 17-pdr gun.

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The Battle for San Pietro based on the account in *Salerno to Cassino* by Martin Blumenson, US Office of the Chief of Military History and *The Texas Army* by Robert L. Wagner.

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The village of San Pietro Infine was a cluster of grey stone houses huddled in medieval fashion part way up the dark and forbidding slope of Monte Sammucro. Facing south, San Pietro dominated the main approach route of the US Fifth Army, commanded by Lieutenant General Mark W. Clark, as it headed up the axis of Route 6 toward Cassino. Allied troops had fought through the Mignano gap. They had secured Monte Maggiore on the left of Route 6 and Monte Rotondo on the right. Now they had to take Monte Lungo on the left, just beyond Monte Maggiore, and San Pietro, just beyond Monte Rotondo. These objectives seemed ready to fall, almost for the asking.

Monte Lungo is a chunk of ground that seems to have broken off Monte Maggiore. It is a steep-sloped, rather smooth-sided mound separated from the larger mountain complex by an abrupt and narrow valley. Along the western edge of Monte Lungo flows a creek and beside it runs the railway north to Cassino and beyond to Rome. Along the eastern edge of Monte Lungo, a distance of two miles, runs Route 6 on its way to Cassino.

Route 6 passes through a deep depression between Monte Lungo and Monte Rotondo. It makes a horseshoe bend, then straightens and moves directly toward San Pietro. Just when it appears that the road will strike the wall of Monte Sammucro, it turns to the left and scurries around the end of the mountain. Route 6 has now gone beyond the point (which was hardly noticeable in 1943) — where it is joined by a road, then narrow and winding, coming westward from Venafro — through Ceppagna and past San Pietro. About a mile beyond the San Pietro road junction, Route 6 goes past another country road leading off to the right, this one to the village of San Vittore, perched on a hill on the north slope of Monte Sammucro.

Allied staff officers believed that a stubborn defence of Monte Lungo and of San Pietro was unlikely. Monte Lungo seemed completely dominated by the adjacent higher ground of Monte Maggiore and outflanked by the troops holding Monte Rotondo. San Pietro, indeed all of Monte Sammucro, appeared clear of German troops. Therefore, a swift thrust from Ceppagna — westward across the southern face of Monte Sammucro — would sweep through San Pietro and, if carried to the western end of the mountain to Route 6, would isolate Monte Lungo. Capture of the crest of Monte Sammucro would in turn make San Vittore untenable to the Germans.

Expecting Monte Lungo to come into Allied possession easily. Allied commanders looked toward San Pietro. What had escaped their intelligence officers was how inaccessible San Pietro really was. There were simply no good approaches to the village, where houses provided stout stone walls for weapons emplacement. Separated from Monte Rotondo and the Cannavinelle Hill by a deep gully and sitting above the Ceppagna road, San Pietro could be entered only by way of cart tracks and trails across the ravine-scarred face of Monte Sammucro. Nor was it evident to Allied intelligence how important San Pietro was for the observation it gave of Monte Lungo and the valley that carried Route 6 to Cassino.

The Germans' determination to hold San Pietro made inevitable one of the most bitter fights in southern Italy and by early December, two regiments of the 29th Panzer Grenadier Division were in position, one on Monte Lungo, the other on Monte Sammucro.

The German defences, organized in depth, extended from the orchard-covered terraces east of San Pietro and across the mile-wide valley west to Monte Lungo. Two battalions of the 15th Panzer Grenadier Regiment held the main line of resistance behind an outpost line of mutually-supporting pill boxes staggered in depth. These emplacements, nearly impervious to constant Allied artillery fire and to attacks by fighter-bombers, were deep pits covered by three layers of logs and further protected by earth and rocks. Each had only a single opening, just large enough for a man to crawl through. The pillboxes were protected from infantry assault by a field of 'S' mines, then barbed wire, and still more 'S' mines. If these outer defences were pierced, the Germans could still rain down artillery, mortar, and heavy machine gun fire without danger to their own troops, hidden in their shelters.

General Clark had been interested in San Pietro since late October 1943. In early November and again in the middle of the month, he pointed to San Pietro and Monte Sammucro as critical objectives. His basic concept for seizing them was to launch not a frontal attack up Route 6 but rather an outflanking attack westward from Ceppagna past San Pietro to Route 6. A successful thrust would pinch off Monte Lungo, bring San Vittore within reach, and open up the last few miles on the direct approach to Cassino.

THE BATTLE FOR SAN PIETRO

Top: **Photograph of the ruined Italian village of San Pietro Infine taken on February 18, 1944 after the fighting for its possession was over (US Army).** *Above:* **The remains of San Pietro, photographed in September 1977 from the southern side of 'Death Valley'.**

Reconnaissance

Late in November, toward the end of a lull in operations, Major General Geoffrey Keyes, Commander of the US II Corps, acted on General Clark's idea. He instructed Major General Fred L. Walker, Commander of the US 36th 'Texas' Division (nicknamed the 'T-Patchers'), to which the 3rd Ranger Battalion was attached, to send the Rangers to San Pietro during the night of November 29. They were to determine whether the Germans had strong defenses or only a thin screen across the San Pietro front. If the Rangers took San Pietro easily, General Walker was to dispatch them around the western end of Monte Sammucro to San Vittore. If the Rangers met superior forces, they were to withdraw under cover to be provided by the 36th Division, but if they had quick success, the division was to be ready to reinforce them.

During the night of November 29, in rain and mist, the Ranger battalion moved westward through Ceppagna toward San Pietro. Just before daylight, as they neared the eastern edge of the village, heavy artillery and mortar fire immobilized the Rangers and they remained pinned down throughout the day. Feeling that immediate manoeuvre would have got the Rangers into San Pietro, and attributing the failure of the battalion to a lack of determination on the part of the commander, General Walker ordered the men to withdraw after nightfall on November 30. The Rangers had lost ten killed and fourteen wounded, and had acquired little information on enemy strength and dispositions, except that the defenders had access to good supporting fires and that no mines or wire barred entrance on the eastern approaches to the village.

On the night of December 2, when a Ranger company took the same route, the men reached a point about a mile east of San Pietro without finding either enemy troops or obstacles. General Keyes then assumed that the Germans were ready to evacuate San Pietro after a show of force. He informed General Walker that he expected the next attack launched by the 36th Division to go through San Pietro to San Vittore without pause.

A Ranger patrol managed to get even close to San Pietro during the night of December 4 without stirring up enemy reaction. Yet a patrol dispatched toward the village by the 143rd Infantry the same night reported it full of enemy troops.

The strength of the German defences was still unclear when Keyes and Walker planned the next phase of operations. General Keyes attached an Italian unit, under Generale di Brigata Vincenzo di Dapino, to the 36th Division. The 1st Raggruppamento Motorizzato (1st Italian Motorised Group) was to be the first Italian unit to fight for the Allies since Italy declared war on Germany on October 13 and the Italians were given the task of capturing Monte Lungo.

In his detailed plan of attack, General Walker had the 143rd Infantry Regiment, commanded by Colonel William H. Martin,

Above: **The CG of Allied Forces in the Mediterranean, General Dwight D. Eisenhower, made a tour of the Italian Front with the CG of the US Fifth Army, Lieutenant General Mark W. Clark, in December 1943 when he met Italian Generale di Brigata Vincenzo di Dapino near San Pietro after the battle (US Army).** *Below:* **After the Battle again in September 1977; the 'CG' with our faithful Italian interpreter Sergio Andreanelli beside Route 6 below Monte Lungo.**

attacking with two battalions during the night of December 7 to capture San Pietro and the high ground immediately north and west of the village. The Ranger battalion would advance from the Ceppagna area to Hill 950 on the divison right. The Italian unit would relieve a battalion of the 141st Infantry on the southern nose of Monte Lungo on the morning of December 8 and move up the slope to capture the hill. In support, the 141st Infantry would place fire on the low ground between Monte Lungo and Monte Sammucro. With these heights and San Pietro captured, General Walker would continue the attack to San Vittore.

The First Attack

Promptly at 5.00 p.m. on December 7, the 1st Battalion of the 143rd Infantry Regiment moved from the town of Ceppagna toward the 4,000-foot Monte Sammucro. The leader of 'A' Company, Lieutenant Rufus J. Cleghorn, had been told by the battalion CO, 'Young man, I want combat troops on the top of that mountain by eight o'clock in the morning.' The twenty-seven-year-old Texan from Waco, leading a reinforced company of 250 men, overran the Germans on the crucial Hill 1205 by 6.00 a.m. on the 8th. Fighting in fog and darkness, sometimes not knowing exactly where they were, the attackers achieved an overwhelming success and the well-entrenched 71st Panzer Grenadier Regiment was driven off the crest of the mountain.

The 2nd and 3rd Battalions of the 143rd Infantry timed the attack against San Pietro to begin at 6.20 a.m. on December 8. Moving from the south-east, both units immediately came under murderous fire from the brilliantly conceived defences in front of the town. By 8.30 a.m. the 2nd Battalion, commanded by Lieutenant Colonel Charles J. Denholm, was in a fierce battle about 600 yards east of the town at the point where German defences intersected the San Pietro-Ceppagna road. Casualties quickly mounted and, even with all units committed, the 'T-Patchers' still could not crack the German defences. To further complicate the problem, they were receiving heavy artillery and mortar fire from Monte Lungo across the valley. Inching forward by squad and platoon, the men finally reached the barbed-wire defences only to meet the redoubled fire of German artillery zeroed in on that line. Many individual attempts were made to break the wire barrier in order to reach the emplaced pillboxes. Immediately to the rear of the barbed wire entanglement were pillboxes dug in about twenty-five yards apart and armed with automatic weapons. The only openings were slits for the weapons, allowing a full field of fire to the front and sides. One stout platoon leader from 'E' Company, Second Lieutenant Richard A. Stewart, tried to jump the wire and toss a grenade through the pillbox slit. He was hit and fatally wounded. A maximum effort by both 2nd and 3rd Battalions on the 8th, and another the following day, gave the 143rd only a few hundred yards of ground from the original line of departure against the San Pietro defences.

Meanwhile, following the 1st Battalion through Ceppagna on December 7, the 3rd Ranger Battalion turned right at the foot of Monte Sammucro and climbed a ridge leading to Hill 950. Less than a thousand yards from their objective, the Rangers in the lead received machine gun fire from two alert German outposts. Rushing and overcoming the outposts, the Rangers reached and took the hill at daybreak on December 8, although they were dislodged during the morning by concentrated German artillery fire.

The most abortive attack of all was that carried out by the Italian unit against Monte Lungo. With hindsight, the official American historian considers that it was an inappropriate objective for a unit undertaking its initial combat action as it was under complete observation from San Pietro and Monte Sammucro and its steep sides made access to the top difficult from the south-east.

Relieving a battalion of the 141st Infantry on the south-eastern nose of Monte Lungo on December 7, the Italian unit prepared to jump off the next morning. Unfortunately, the troops made no ground reconnaissance, nor were combat patrols dispatched. A single security patrol sent to the flank during the night failed to return.

After a thirty-minute artillery preparation on the morning of December 8, the Italian troops, with good morale and high expectations of success, moved out with two battalions abreast into a heavy mist that had settled like a smoke screen over the small rocky knobs of the hill. Believing that the artillery preparation had neutralised all resistance, the Italians marched up the hill in compact formation. Despite little attack discipline, they made good progress until the assault battalions began to receive machine gun and mortar fire. The men faltered, then stopped.

In the next three hours they became completely demoralized. Despite Generale Dapino's earlier estimate of his ammunition needs, the artillery unit in direct support soon ran out of shells. Missions requested from other artillery units were beyond the range of the pieces. Co-ordination and liaison between infantry and artillery and all other communications were poor, and American artillery in general support hesitated to bring fire into close support because of lack of knowledge of the exact locations of the infantry.

By mid-morning, personnel losses and disorganisation had reduced the strength of the Italian infantry group to about one battalion of effectives and it was apparent by noon that the attack of the 1st Italian Motorised Group had failed. General Walker permitted Generale Dapino to withdraw his men to the south-eastern nose of Monte Lungo where Colonel Richard J. Werner of the 141st

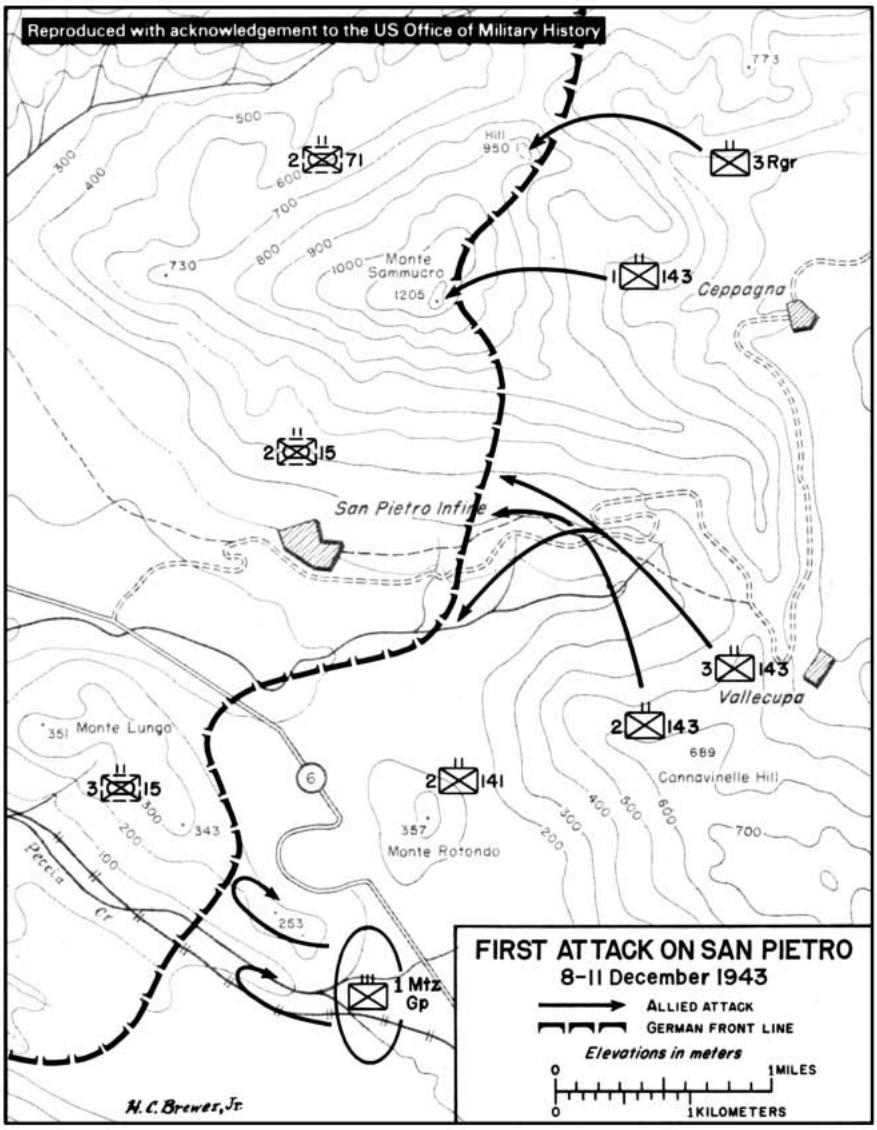
This Signal Corps photograph was not released until December 16, 1948 (exactly five years after the battle) and shows troops of Battery D, 105th Anti-Aircraft Battalion below the towering slopes of Monte Sammucro (US Army).

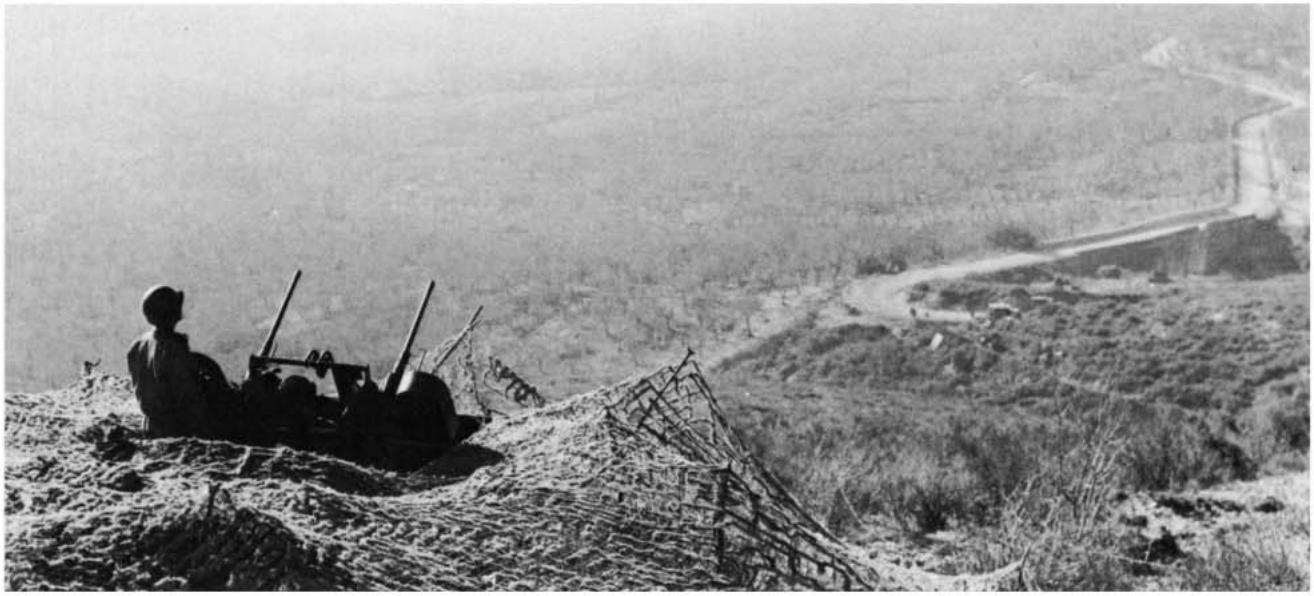
Infantry helped restore order and set up defensive positions against a counter-attack that everyone expected. When a company of the 141st Infantry took firing positions on Monte Rotondo to back up the Italian unit, and when 8-inch howitzers swept the crest of Monte Lungo to dicourage the Germans from following up their success, the situation once more came under control.

Meanwhile, on the other side of Route 6, on Monte Sammucro, the 1st Battalion GIs on Hill 1205 who had taken their objective were hard pressed to hold it. The Germans launched numerous counterattacks during the next four days. The Rangers who had been pushed off Hill 950, supported now by 4.2-inch mortars that had been painfully lugged up the slope of Monte Sammucro, attacked again on December 9 and recaptured the hill. They too were subjected to severe pressure from the Germans, who sought to regain the two most important heights on Monte Sammucro and who were denied by stubborn resistance and a telling use of white phosphorus shells. Yet the constant fighting and exposure to the elements depleted both American battalions. By December 10, the 1st Battalion, 143rd, was down to half strength, a total of 340 men, with the battalion commander, Lieutenant Colonel William W. Burgess, wounded and two company commanders killed (Lieutenant Cleghorn was wounded on the 11th).

To bolster the units on the high ground of Monte Sammucro, General Clark sent General Keyes the 504th Parachute Infantry, which had earlier operated on the Fifth Army right flank. Keyes attached the paratroopers to General Walker, who committed them on Monte Sammucro to insure its retention.

The failure to take San Pietro and Monte Lungo, to say nothing of San Vittore, disappointed General Walker, but only momentarily as he was soon immersed in plans for a new attack.





Above: **Another photograph, released post-war, of the 105th AA Battalion guarding the triple-span bridge on the road from Ceppagna to San Pietro (US Army).** *Right:* **After the war, a new bypass road was constructed, visible on the left of the old road.**

The Second Attack

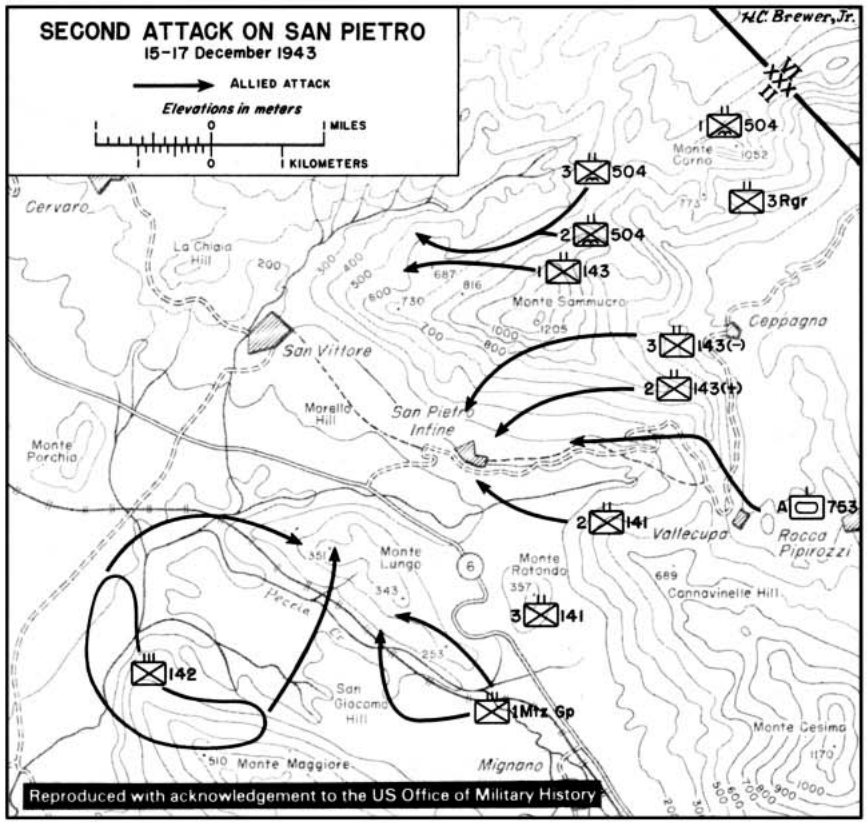
The second attempt to take San Pietro was shaped in large part by a visit General Walker received around December 9 from Brigadier General Donald W. Brann, the Fifth Army G-3. Brann brought word that General Clark was interested in making greater use of armour. Clark had asked for the 1st Armoured Division, Brann explained, and had received it but was somewhat embarrassed because so few opportunities existed for employing the division, which was still uncommitted. Was there any possibility of using some tanks of Walker's attached tank battalion to help capture San Pietro?

Walker thought not. The ground was anything but favorable for tank warfare. But since the army commander was interested in employing armour, and since General Keyes had also indicated his desire for tank action, Walker said he would try.

He asked his tank battalion, the 753rd, to make a company available for an attack on San Pietro scheduled for December 12. The tanks, he informed Lieutenant Colonel Joseph G. Felber, the battalion commander, would operate with the two battalions of the 143rd Infantry that had been halted in their earlier effort against San Pietro a thousand yards or so east of the village.

The tank battalion staff began at once to study maps and aerial photos and to make ground and aerial reconnaissance. The results were discouraging. The southern face of Monte Sammucro had numerous stream beds and gullies that would serve the Germans as anti-tank traps and ditches. The road from Ceppagna was barely wide enough for two-way traffic, and between Ceppagna and San Pietro there were four highly sensitive points: a small bridge, a 10-foot culvert, a 15-foot culvert, and a 3-span bridge, all of which the Germans could easily destroy.

Above the road, terraces of olive trees and patches of scrub vegetation covered the foothills, obscuring visibility from the road and offering concealment to German defenders. Rain had saturated and softened the earth. Worst of all were the terraces, for each was elevated three to seven feet above the



next by rock walls. The few donkey trails that led from the road to San Pietro were too rough and narrow in most places for tanks. One trail was somewhat better — three to four feet wide, it led to the first terrace beside the road, then broadened into a cart track six to eight feet wide on the second terrace. A brick retaining wall would perhaps give sufficient tank footing, and engineer support might help tanks work their way precariously over the terraces along the trail to the village.

Brought into the problem, the engineers suggested another tactic. If tanks could get far enough above the road and high enough into the foothills, they might be able to make their way to the village by dropping down successive terraces. To this end, engineer troops worked through the night of December 11, breaking down several terrace walls and cutting a trail to a starting point high above the road.

However, when the tank company tried to get into position before daybreak, the tankers found the route impossible. The leading tank bogged down in soft earth and could get no higher than the second terrace above the road. Attempts to go beyond that point only churned up mud. When the lead tank finally threw a track and blocked the way, the attempt was abandoned. Dawn arrived, bringing with it accurate German artillery fire aimed at the unusual sounds of tank activity.

For his next effort, General Walker planned a large-scale, co-ordinated, and progressive attack against all three of his immediate objectives, San Pietro, Monte Lungo, and San Vittore.

In the first stage he would secure more of Monte Sammucro. If he could take three lesser peaks about a mile west of Hill 1205, he would definitely control the western portion of the hill mass. He would then have conclusively outflanked San Pietro and could threaten to cut the German escape route from Monte Lungo by dominating the trough between Monte Sammucro and Monte Lungo through which Route 6 runs. He would also have troops in good jump-off positions for an advance to San Vittore. During the night of December 14, the 504th Parachute Infantry and the 143rd Infantry were to attack the three hill objectives and gain them by daybreak.

Walker would then move into his second stage by launching the main effort at noon on December 15 using a pincer movement exerted against San Pietro by tanks approaching, as before, from the east but now supported by the 141st Infantry advancing from Monte Rotondo on the south. With the defenders of San Pietro eliminated or at least engaged and unable to take the slopes of Monte Lungo under fire, Walker would send the 142nd Infantry during the evening hours to capture Monte Lungo from the west, an approach that would give the assault troops some defilade. Finally, after daylight on December 16, he would send the Italian troops up the south-eastern nose of Monte Lungo once again, this time to mop up. By the 16th he also hoped to be moving against San Vittore.

In the bright moonlight of the very early hours of December 15, the 1st Battalion, 143rd Infantry, advanced toward two of the three hills west of Hill 1205 in what was essentially a preliminary operation. Unfortunately, Monte Sammucro was virtually bare of vegetation at that height, and though the moonlight gave both the Germans and the Americans good visibility, their defensive positions gave the Germans concealment. About two-thirds of the way to the first hill objective, the battalion came under machine gun and mortar fire. Unable to manoeuvre on the incline and to bring effective supporting fire against the well dug-in Germans, the men suffered casualties while trying to dig holes for cover. Long after daybreak, the time that General Walker had expected to have captured the three hills on the western part of Monte Sammucro, the infantry battalion had not only failed to reach its objective but was reduced to 155 effectives, and they were almost out of ammunition. To replenish supplies and evacuate casualties, pack trains made hazardous trips up the mountain slope during the afternoon.

Nearby, the 504th Parachute Infantry was undergoing similar difficulties. Paratroopers reached a point less than 500 yards from their hill objective, and beyond that were unable to move. As German fire swept the path of advance, the paratroopers pulled back and dug in on Hill 1205.

It was more than plain that the Germans were fighting to keep open the route of withdrawal from Mone Lungo and San Pietro, but they were ready to give up neither. This became evident as the second stage of General Walker's operation got under way.

Above: **The small bridge on the old road to San Pietro as it is today.**

Above: **The beginning of the trail, where it branches off from the Ceppagna-San Pietro road, used by tanks of the 753rd Tank Battalion in their abortive attempt to reach the village on December 15, 1943.** *Below:* **The trail, photographed from the village end, looking towards the road.**

The Tank Attack

Top: **There were two main battles for San Pietro: December 8-9 and December 15-17. This photograph shows GIs observing the effect of the artillery bombardment of Monte Lungo on December 15 (US Army).** *Above:* **We discovered that the location was right beside the line of departure for the tanks of the 1st and 3rd Platoons, Company 'A' of the 753rd Tank Battalion.**

During a conference two days earlier, when the division commander had discussed his plans with his subordinate commanders, he had accepted and refined an idea presented by the commander of the 753rd Tank Battalion. Colonel Felber recommended that Company 'A'. which was to make the attack, remain on the road from Ceppagna and strike swiftly toward San Pietro. The infantry would then move across the terraces and over the cart trails into the village proper, while the tanks, in addition to thrusting down the road, would lend the support of their guns. General Walker then suggested that the tank column should split where the well-defined trail leading directly to San Pietro branched up from the road.

Acting on this suggestion, the tankers complicated the scheme. They decided to have the leading platoon move to the trail junction. The first section of that platoon would turn up the trail, take what was called an 'overwatching' position on a terrace above the road, and search the north-eastern slope of Monte Lungo with fire. The second section of the lead platoon would continue along the road, pass below San Pietro, and block the western exits of the village. The second platoon would take the trail, deploy one section in overwatching positions, and continue as far as necessary with the other section to block the village exits on the north. If it became feasible, the tanks would finally converge on San Pietro from the north and from the west.

The tankers requested smoke to be placed on Monte Lungo and on the western tip of Monte Sammucro, an intense artillery preparation to be laid on San Pietro, direct fire support from Monte Rotondo, and accompanying infantry to protect the tanks. Because the road was undoubtedly mined and the culverts and bridges were probably prepared for demolition, the tankers also asked for two Valentine bridge-laying tanks.

General Walker approved these requests. A company of tank destroyers on Cannavinelle Hill would give direct fire support and a company of infantry would protect the tanks from close-in fire. He obtained from British X Corps two Valentine tanks, but unfortunately only one arrived in operating condition. The crew furnished by Company 'C', 753rd Tank Battalion, to operate the tank had less than twenty-four hours to learn how it worked.

While the tankers would drive against San Pietro from the east, a battalion of the 141st Infantry would descend down Monte Rotondo into the large gully between that height and Monte Sammucro, then climb the steep and rather open slope to the Ceppagna road and attack San Pietro from the south. Trying to get still more pressure against San Pietro, General Walker instructed the battalion of the 143rd Infantry, which by that time was to have secured the western part of Monte Sammucro, to send whatever elements could be spared down the slope to squeeze San Pietro from the north.

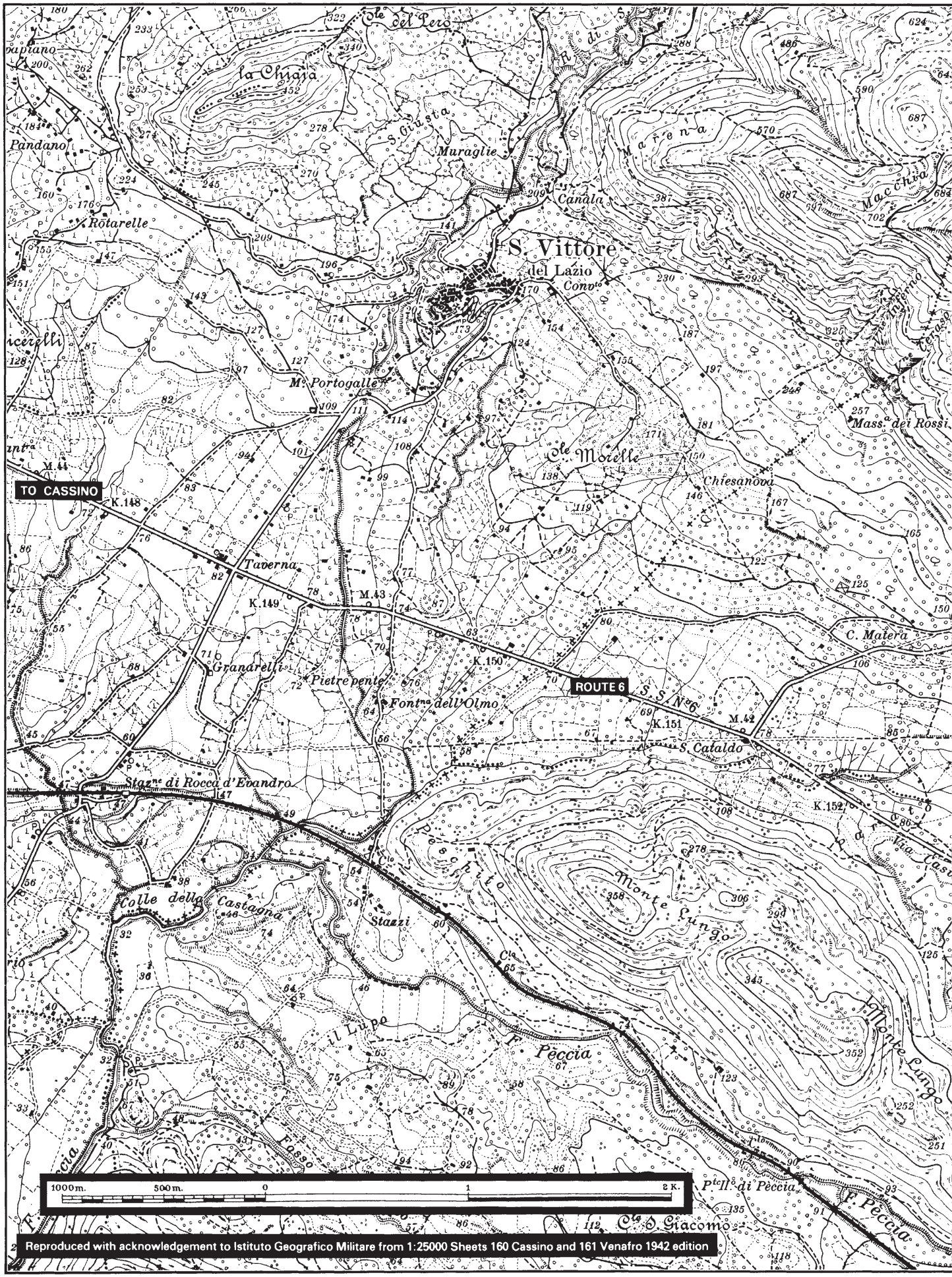
Although the preliminary operation in the western part of Monte Sammucro had failed to gain the three hills General Walker wished, he opened the second stage of his attack as scheduled. At 11.00 a.m. December 15, as the morning mist was lifting from the ground, the 1st and 3rd Platoons of Company 'A', 753rd Tank Battalion, departed from their assembly area. The tanks of the two platoons were interlaced in the column to facilitate the subsequent turnoff from the road. At the line of departure, a bend in the Ceppagna road, the column halted while tanks and tank destroyers fired for fifteen minutes on San Pietro. At noon, the lead tank crossed the line of departure, followed in order by a second tank, the one British Valentine, and then the fourteen other Shermans.

Beyond the bend, the road was cut into the side of Monte Sammucro, with hardly a

straight stretch, the road curving first one way, then the other. On the right, a stone retaining wall that propped up the terraces was an obstacle against movement off the road. On the left, a sheer embankment dropped off precipitously.

Without even receiving German artillery fire, the lead tank (1 on map) in the column crossed the small bridge, the 3-span bridge, then the 10-foot culvert, and reached the trail junction. Turning right, the tank inched up the narrow trail, finding barely enough room to move. After traveling about 100 yards, the tank commander reported over his radio that the trail was no longer passable. The company commander ordered him to leave the trail and open a path to San Pietro across the terraces. Using his tank to break down and crush part of a retaining wall on his left, the tank commander moved onto a terrace above and not far from the road. For more than three hours, the tank crew worked slowly and painfully toward the village, in the process destroying several machine gun nests, disrupting a command post manned by five German officers, and finally coming to within sight of San Pietro. There, at the end of the afternoon, the tank commander received word to return.

Above: **Photograph, taken at the line of departure for the tanks but looking eastward, shows a camouflaged half-track with M-15 AA mount of one automatic 37mm cannon and twin .50in calibre machine guns (US Army).** *Below:* **September 1977 with the village of Rocca Pipirozzi in the background.**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SITE OF NEW QUARRY
TRAIL
SMALL BRIDGE
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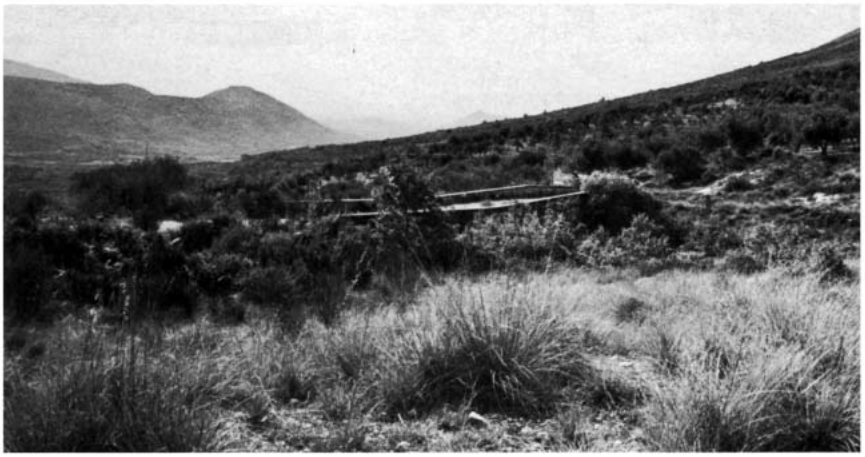
3-SPAN BRIDGE
10-foot CULVERT
15-foot CULVERT
LINE OF DEPARTURE
TO MIGNANO
MONTE LUNGO CEMETERY
TANKS 2, 6-8 DESTROYED BY MINES
TANKS 3-5 DESTROYED BY SHELLFIRE
TANKS 9-13 DISABLED
S. Pietro Infine
M. Sammucro
M. Rotondo
Mass.a Crolla
Mass.a Porcaro
Mass.a Guerra
C. Cardillo
C. Forgione
Mass.a Brunetti
Mass.a Moresco
Casa Matteo
Ceppagni
S. Eustachio (rov.)
S. Leonardo
S. M.a dell'Acqua
Vallecu
K.153
K.154
K.155
K.156

Above: **Close-up shot of the 3-span bridge taken on January 8, 1944. San Pietro had fallen on December 17 and San Vittore, two miles further west, on January 6 — the battles for Cassino were about to begin (US Army).** *Below:* **The bridge remains exactly as it was photographed in 1944 — only new undergrowth spoils the comparison.**



The second tank in column (2) had remained on the road and gone beyond the 15-foot culvert, which was still, somewhat surprisingly, intact. The tank crossed, but soon afterward struck a mine that put it out of action. The crew remained inside, manning guns against targets of opportunity that appeared occasionally on the terraces above the road.

The Valentine was next in line. When the crew discovered that the 15-foot culvert was still standing, the driver, in conformance with plans, pulled over to the side of the road to let the following tanks cross.

By this time, German artillery shells had begun to fall.

The next three tanks in column (3, 4 and 5) passed the Valentine, crossed the 15-foot culvert, and manoeuvred past the tank (2) that had been disabled by the mine. As the first of these three tanks started to turn up another trail, the tank commander saw that a destroyed German Mk IV tank blocked the trail. He radioed the information to his company commander, and this news, adding to the earlier report that the terraces were too steep for the tanks to negotiate, prompted the company commander to direct all his tanks to continue along the road to positions below San Pietro, the tankers there to support with fire the infantry attack coming from the south. The three tanks remained on the road but just beyond the culvert, the first received a direct hit from an anti-tank shell and exploded. The next tank crossed, received two direct hits in close succession, and burst into flame. The third tank was struck by three shells and set on fire before reaching the culvert.

At the culvert, the next two tanks in the column (6 and 7) struck mines as they tried to bypass the Valentine. The tank immediately following (8) tried to push one of the disabled tanks off the road, and itself struck a mine. The next one (9), after attempting to push the two tanks off the embankment without success, tried to climb the terrace and failed.

Having learned from the lead tank that had worked across the terraces that it was closing in on San Pietro, the company commander ordered the remaining tanks in the column (10, 11, 12 and 13) to follow that route. The first to try turned over on its side and blocked the way. Another threw a track. A third slipped off the embankment on the left side of the road, dropped five feet, and turned over. A fourth collided with one of the disabled tanks.

The last three tanks (14, 15 and 16) backed to a path leading off the side of the road, their intention being to work their separate ways over the terraces to San Pietro. Two threw their tracks and the third found its progress blocked by an impassable ravine.

With darkness approaching, the company commander, upon battalion order, withdrew his operating tanks. Of the sixteen Shermans committed, seven were destroyed, five disabled and only four returned. They carried with them the crews of nine others and several men of the Valentine crew. The Valentine was undamaged, but it had been boxed in by disabled tanks and was unable to move. Several damaged tanks were salvageable, and the tankers hoped to retrieve them the next day.

The terrain, road mines, and effective fire had stopped not only the armoured thrust but also the Company 'E', led by Captain Eben C. Bergman, working with the tanks. The infantry had hardly advanced beyond the line of departure when a shower of small arms and automatic weapons fire arrested movement. As for the 2nd and 3rd Battalions of the 143rd Infantry, which General Walker had instructed to descend the Monte Sammucro slope and take San Pietro from the rear, the 'T-Patchers' were soon met by fierce automatic weapons, mortar and artillery fire and, having advanced only about 300 yards, were unable to move.

The Final Attack

Above: **'At the San Pietro terminal of the trail, the litters bearing the wounded and the dead would stop. The former would be hustled to the Aid Station, while the blanket-covered dead would lie stiffly lashed to their litters, with only their feet with their frayed, muddy leggings or combat boots protruding from under the blankets' — written by a 36th Division Engineer (111th Engineer Combat Battalion), Earl P. Powers, after a return trip to the battlefield in 1949.** *Below:* **Sergio Andreanelli stands with Signore Domenico beside the rebuilt house at the trail junction now owned by Benedetto Nardella.**

South of San Pietro, the 2nd Battalion, 141st Infantry, had jumped off shortly after noon. An hour and a half later, after crossing the deep gully separating Monte Rotondo and Monte Sammucro, already christened by the GIs 'Death Valley', the two assault companies, 'E' and 'F', climbed the steep slope below San Pietro, rushed across the Ceppagna road, and approached the southern edge of the village. Along a stone wall eight to twenty feet high, which gave protection against a large volume of machine gun fire coming from houses in the village, the companies built up a firing line. By standing on each other's shoulders, a few intrepid soldiers managed to scale the terraces and crawl toward the village to try, without success, to neutralize enemy machine guns by grenades. Mortar shells dropped into the village seemed to have little effect on the German fire. Because crew members of several of the destroyed and disabled Shermans had escaped the burning tanks and taken refuge in San Pietro, the troops hesitated to call in artillery support. Besides, the infantry was gunshy of close-support fire as, earlier that afternoon, several shells had fallen short and landed among the assault troops.

Major Milton J. Landry with his 2nd Battalion on the southern edge of San Pietro estimated that about a hundred Germans defended the village. The troops identified, without precisely locating, at least one tank or assault gun firing from a position in or near San Pietro, at least four more from a distance. Despite the relatively few defenders, the small arms, automatic weapons, mortar, and anti-tank fire that spewed forth were devastating. By evening a head count revealed that 'E' company had one officer and fifty men; 'F' three officers and sixty-five men and 'G' company two officers and thirty-four men left.

Pressed by regimental headquarters to take San Pietro at all costs, the battalion mounted an assault at 1.00 a.m. on December 16 by 'E' and 'F' companies with 'G' in reserve. Although all wire communications had by then been destroyed, making it difficult to co-ordinate supporting fire, a few men stormed into the village, fighting their way past the

first houses by grenade and bayonet. They were unable to remain without immediate reinforcement. Those who could returned to the stone wall.

With a total effective strength of not more than 130 men, the 2nd Battalion, 141st Infantry, renewed the attack at dawn on December 16, from the west end of the village again led by companies 'E' and 'F' with 'L' in reserve. At the same time that the 1st Battalion, 143rd Infantry, at the top of Monte Sammucro, tried once more to take its two hill objectives near the western tip of the mountain. Neither battalion made progress. That afternoon, the battered 2nd Battalion 141st fell back disorganised to Monte Rotondo. On the following morning, December 17, the exhausted 1st Battalion, 143rd, was replaced by the 1st Battalion, 141st Infantry, and the weary men descended Monte Sammucro and entered a bivouac area for rest.

The defenders of San Pietro, a battalion of the 29th Panzer Grenadier Division, had conducted a skillful and tenacious defence of a strongpoint that had, by Hitler's order, become symbolic of the German effort in southern Italy. However, although they were ready to continue their fierce struggle, the fate

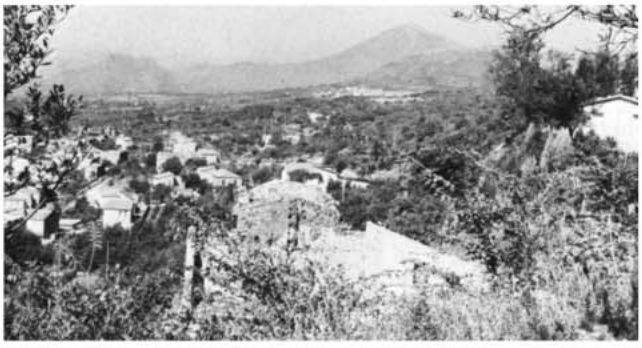
Top: **Paratroopers of the 504th Parachute Infantry (part of the 82nd Airborne Division) on the road to San Pietro on December 17. The 504th, which lost fifty men killed in the fighting for Monte Sammucro (Hill 1205), took over from the worn-out 1st Battalion of the 143rd 'T-Patchers' after the battle for the village was over (US Army).** *Above:* **The retaining wall still bears the marks of the battle; in the background, the house of Signora Lisa Fuoco.**

Left: **As the paratroopers pass the ruins of Signora Fuoco's house, engineers from the 111th Engineer Combat Battalion check the road for mines. The photographer following the 504th into San Pietro was Pfc. Bonnard of the 163rd Signal Corps Photo Company (US Army).** *Above:* **Our lone GI follows the same route in September 1977.**

Left and above: **Further along the road, the paratroopers pass one of the 753rd Tank Battalion's knocked-out Shermans — this is probably Tank No 2 on the map on pages 8/9 (US Army).**

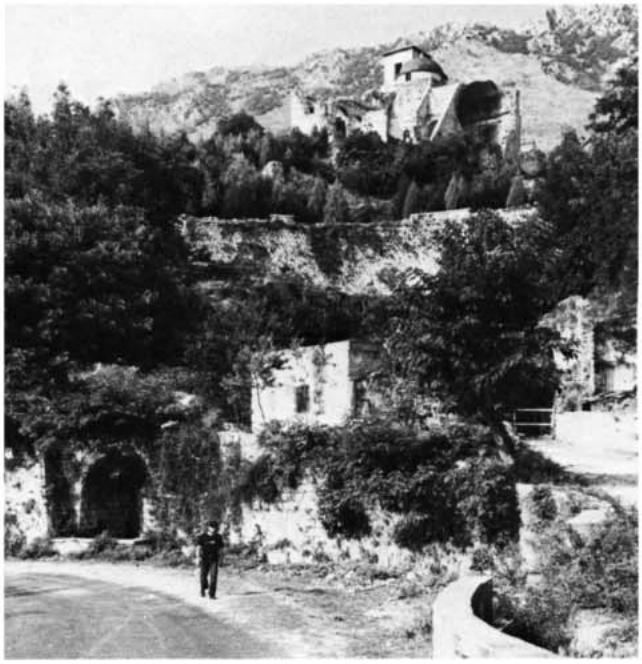
Left and above: **Italian women, one carrying a child and the others the remnants of household goods, walk back up the road from San Pietro passed another 753rd Sherman (US Army).**

Left: **The paratroopers find the village is a mass of rubble, almost one hundred per cent destroyed (US Army).** *Above:* **Signore Bocchino, who pulled down the ruins, told us that this is the same corner of San Pietro.**



Left and above: **Another of the Shermans, probably 3, 4 or 5 on the map, is used as a vantage point for GIs watching the shelling of Cassino on February 6, 1944. The monastery is still intact (US Army).**

Above left: Other GIs, photographed by Signal Corps photographer Bonnard, enter San Pietro from a westerly direction, up the road which leads from Route 6 (US Army).



Above right: Our lack of troops on the ground, during our return visit, necessitated the use of our same 'Italian' GI! Today, the gaunt ruins are mellowed by foliage.

Above left: Chaplain Robert E. Alspaugh, from the 1st Battalion of the 141st Infantry, supervises the evacuation of American dead from San Pietro to the 36th Division temporary cemetery at

Maranella on December 31, 1943 (US Army). *Above right:* The beginning of the trail to the village showing the rebuilt house of Signore Nardella.

Left: Close by, Staff Sergeant Earl P. Stanguard and Private Joe Albrightson string signal wires on Lisa Fuoco's ruined home.

Above: Although the house was rebuilt about 1955, some ruins remain today. In the background, Monte Sammucro.

of San Pietro was to be decided by events on the opposite side of 'Death Valley'.

During the night of December 15, the 2nd Battalion, 142nd Infantry, and the 3rd Battalion, 143rd Infantry, moved westward across Route 6 and around the southern nose of Monte Lungo. Working their way up the valley separating Monte Lungo from Monte Maggiore, the battalions then climbed Monte Lungo's western slope. They took the enemy by surprise, rooted the reconnaissance battalion of the 29th Panzer Grenadier Division out of foxholes, and reached the top of the mountain by dawn. By mid-morning December 16, the battalions possessed the greater part of Monte Lungo and were mopping up. To reduce the last remaining ridge in the south-eastern portion of the mountain, the 1st Italian Motorised Group jumped off on the morning of December 16, moved swiftly, and completed the capture of Monte Lungo that afternoon.

With Monte Lungo lost and 'Death Valley' between it and Monte Sammucro threatened, the Germans in San Pietro were in danger of being cut off. An outburst of fire on the afternoon of December 16 masked their withdrawal.

On the morning of December 17, the silence in San Pietro was almost eerie. Suspecting a trap, American troops moved cautiously into the ruins to find the village deserted; only the dead remained.

December 17, 1943. Colonel William H. Martin, Commander of the 143rd Infantry Regiment, being greeted by Signora Caterina Nardelli and members of her family. Husband Antoniuccio stands behind her on the left and son Bonadetto bottom right, in front of 'X-Ray eyes Tony Curtis'. Caterina is still alive now living in the USA. Colonel Martin was relieved of his command by Lieutenant General Mark Clark following the failure of the controversial Rapido river crossing in January 1944. He died in Waco, Texas on July 20, 1969 after just having watched Neil Armstrong land on the Moon.

Left: **Villagers leave the caves in which they had sheltered during the fighting (US Army).**
Above: **Signore Antonio Bocchino beside the same caves in September 1977.**

San Pietro today

When the T-Patchers entered the deserted San Pietro, they found it almost one hundred per cent destroyed with the small, steeply-stepped streets blocked with rubble. Of the thousand or so inhabitants, who had sheltered in cellers or the caves of Valle della Morte on the western edge of the village, only seven hundred remained alive. Only about a half of these came from San Pietro itself as the others were farmers and shepherds from the surrounding fields.

The Americans put Signore Antonio Bocchino in charge of a gang of thirty labourers to clear the rubble and pull down dangerous houses and walls. During the clearance work, which lasted six months, the church tower of San Antonio was demolished but the second, larger church of San Michele was repaired and a new tower added. However most of the houses were uninhabitable and, perhaps because of the risk of further damage from the earthquakes which occur in the

Three stages in the life of a church. *Above:* Men of the 142nd Infantry Regiment Medical detachment enter San Pietro to search for wounded. Note the ruined condition of San Michele church in the background (US Army).

region, the villagers began to build the new town of Campobasso at the foot of the hill. Only about forty persons returned to their former homes and for them a main was installed in the previously waterless village.

Today Signore Bocchino is one of the half-dozen people still clinging to an existence in old San Pietro Infine and together with Signore Tannotto Domenico, who lives in the lowest of the old village houses just a few yards from the San Pietro-Ceppagna road, he took us on a tour of the village. Young trees now sprout from the cumbling shells of houses and the steep, grass-covered cobbled paths, the empty archways and doorways add a quiet beauty to what is now a ghost town. In places the old street names can still be seen carved on blocks of stone and the Via San Giovanni and Via San Angelo transport one mentally back to the days of the Romans.

In the centre of the village, near where the cart track used by the American tanks makes its way down to the road to Ceppagna, a fountain with cool water provides a welcome refreshment against the burning sun. Just above stands San Michele church and here Signore Bochino was able to clear up a problem we had discovered when studying our wartime photographs of San Pietro. The church is definitely seen to be ruined in one photograph taken in 1944 but, in a later shot, taken for American archives in 1955, the church appears completely repaired with a new tower. Our readers can therefore imagine our puzzlement seeing that the church today is again in a ruined state with the same large shell hole in the end wall. Signore Bocchino solved the mystery by explaining that while they had repaired the church, the bonding could not have been done properly as the wall fell down at a later date!

We were also taken down a precipitous route to the caves where the villagers had sheltered, the entrances to which are now nearly silted up. We were told by one person we had spoken to that they were full of poisonous snakes but we found nothing worse than a few tin cans. We asked Signore Bocchino if there were any relics remaining from the battle but were told that all the helmets and other equipment found during the clear up of the village were scrapped as in 1944 they were not considered to be of any value.

Retracing the route of the American tanks down the winding road was full of peaceful

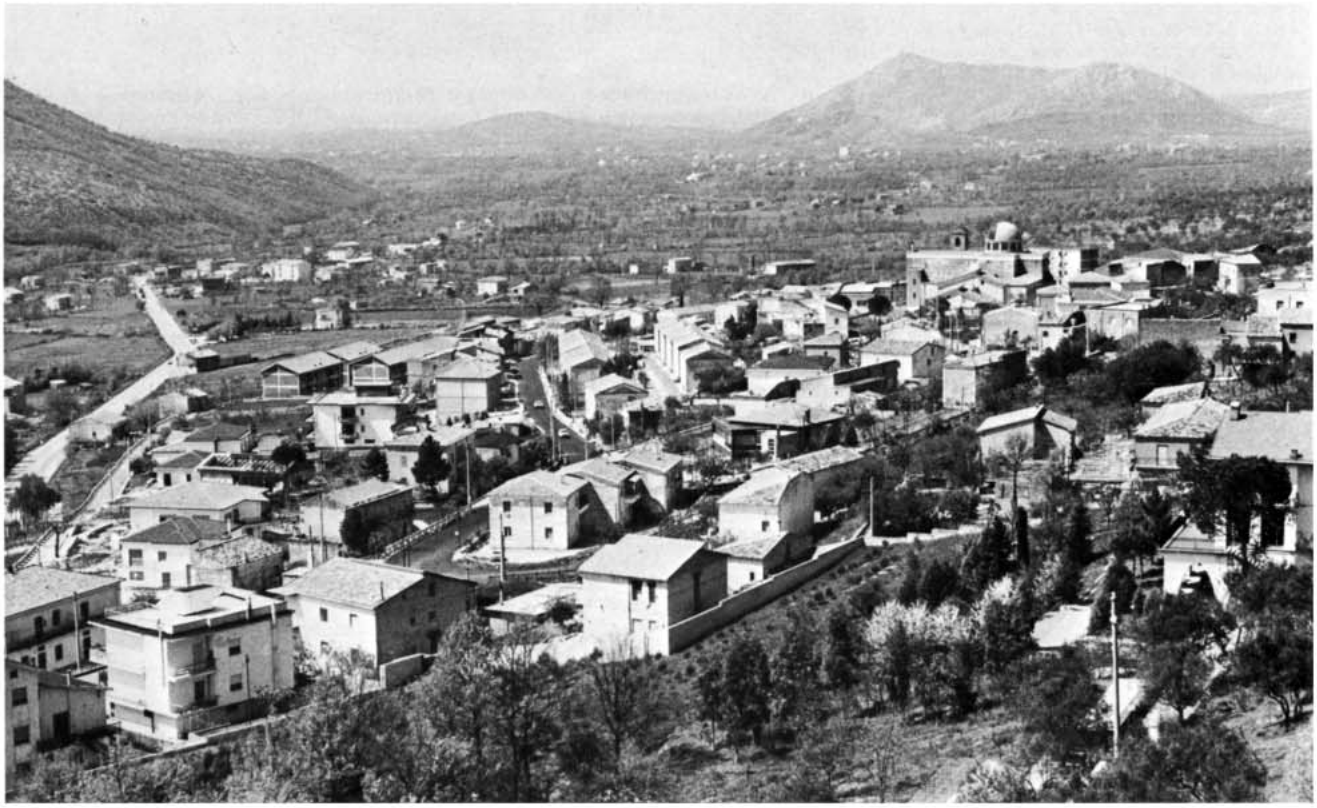
Above: The church, photographed on June 6, 1955 for American archives, showing the repaired end wall, rebuilt tower and new dome (US Army).

The church as it is today showing the collapsed repaired end.

contrasts. The trail from the village, used by the tanks and down which the wounded and dead were evacuated in 1944, emerged on the road beside an old ruined house belonging to Signora Lisa Fuoco. For ten years after the war the ruins were left until she returned to rebuild her house. A few hundred yards up the road stands another ruined house with a plaque on one wall. To the non-Italian speaking editor the date 1944 seemed significant but our faithful interpreter Sergio Andreanelli quickly pointed out it had nothing to do with the war although equally distressing as it recorded that three people had been murdered during a robbery nearby.

Further along the road, the triple-arched bridge still stands exactly as it was photographed by an American cameraman during the battle except for the undergrowth and repaired shell damage. One passes several culverts on the way to the top of the road all of which look new constructions as does the small, single-span bridge just past the new quarry which has been cut into the hillside.

The new town of Campobasso now lies below old San Pietro in 'Death Valley'.



Left: **Labourers, under the direction of Signore Bocchino, demolished the old tower of San Antonio church (San Pietro's second place of worship) soon after the war (US Army).** *Above:* **Today, the site of the church is marked by piles of overgrown rubble.**

We have now visited San Pietro Infine twice and it never ceases to be a moving experience. Being the subject of John Husten's 1944 film 'The Battle of San Pietro', a film so descriptive of the true horrors of war that it had to be cut from five reels to three (even in its reduced, thirty-minute form it is rarely shown at all today), the ruined village stands as a supreme example of the sacrifice and tragedy of war. This is not brought home more forcefully than when one visits the nearby Italian war cemetery on Monte Lungo. Not only are there dead buried there from the 'War of Liberation 1943-45' who died fighting for the Allies but, side by side, sometimes in the same stone tomb, lie other Italians killed in earlier battles whilst fighting with the Germans. One can well ask what did they die for — fighting for both sides — and it is a question for which one can find no answer.

Above: **The War Cemetery on the slopes of Monte Lungo where 974 Italians lie buried in stone tombs. The cemetery was opened on December 14, 1963 and ex-Lieutenant Sergio Andreanelli, of the Genova Cavalleria, stands on the same spot as he did when a cadet with the inaugural Guard of Honour.** *Below:* **A Skoda field gun still points at San Pietro.**

MOSQUITO FILM STARS

by GORDON RILEY

Mosquito TT35, TA719 (G-ASKC) alias HT-6/HJ898 beside the camouflaged control tower at Bovingdon. Now preserved by the Skyfame Museum (R. W. Cranham).

July 1963 saw the unlikely spectacle of a squadron of de Havilland Mosquitos operating from RAF Bovingdon, all the activity being connected with the filming of '633 Squadron' by the Mirisch Film Corporation. The making of the film coincided with the retirement of the last Mosquitos from RAF service, the entire 'squadron' having been in use with No. 3 Civilian Anti-Aircraft Co-operation Unit based at Exeter. On their retirement, the Mosquitos were moved to Bovingdon, except for two: a T.III which was bought by the de Havilland company and a TT.35 which was bought by Liverpool Corporation.

On arrival at their new home, a survey showed that five aircraft were airworthy, three capable of taxying only whilst a number of major components were useable for cockpit shots, airfield 'padding' and so forth. This was to be the last time that five Mosquitos would be seen flying together.

The plot centered around a mission to destroy a German heavy-water plant in Norway, the only way of ensuring its destruction being to 'toss' a 4000lb bomb to explode beneath an enormous overhang of rock, the idea being that the shock-waves would dislodge the overhang and cause it to bury the plant. As the plant was situated at the top of a fjord which was heavily guarded by German flak batteries, the aircraft had no choice but to fly up the fjord and hope that the Norwegian Resistance had silenced the batteries.

Additionally, the aircraft were supposed to be armed with four machine guns in the nose. All the TT.35 aircraft had the bulged bomb-bay and thus approximated the B.IV Series II although this never carried nose armament. The solitary T.III approximated an NF.II.

The aircrew were under the command of Captain John Crewdson of Film Aviation Services Ltd., those pilots unfamiliar with the Mossie being converted on the T.III trainer, TW117, before going on to the TT.35s.

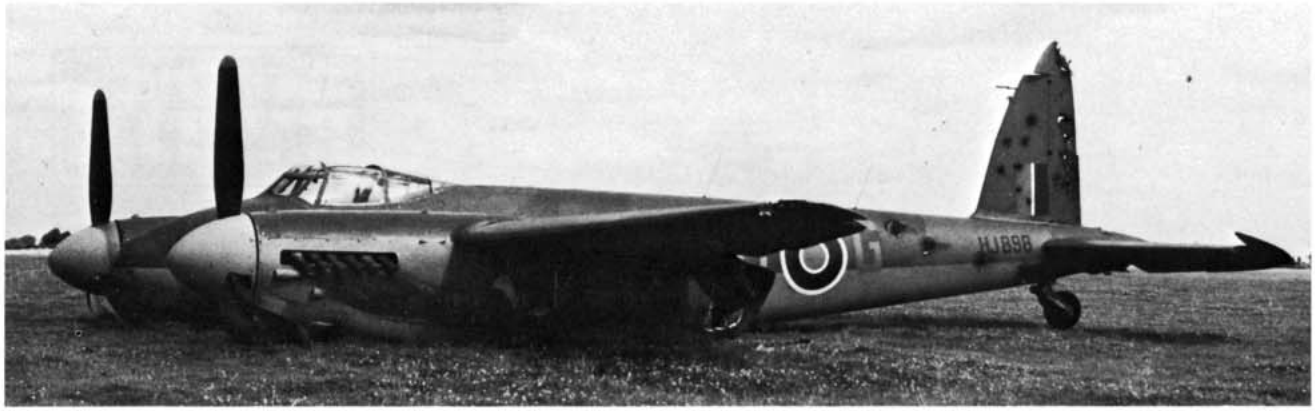
Whilst the aircrew were training, the ground crews were busy camouflaging the all-silver aircraft and removing the yellow and black diagonal stripes which signified their role as target tugs. The camouflage scheme was modelled on that used for the wartime B.IV and FB.VI versions and serials, originally allocated to FB.VIs, were applied, each aircraft carrying squadron markings in the HT range. Incidentally HT was never used for Mosquitos, being allocated to Nos. 601 and 154 Squadrons, both single-engined fighter units.

The main flying base was Bovingdon. The over-water scenes were shot over the Wash although some footage was filmed on the positioning flight to Scotland where the Isle of Skye doubled for the Norwegian fjord. Although the flying shots were memorable, it was the special effects which tended to stick in one's memory especially when one considers that three Mosquitos were totally destroyed in obtaining these scenes.

As already mentioned, three aircraft could only taxi and these were the ones that were used for the crash scenes. TA642, a TT.35, was to be used for a crash landing sequence in which it suffered an undercarriage collapse. Unfortunately it did just that when it was not supposed to and another TT.35 had to be selected for the scene. This was RS718 which had taxied as HJ662/HT-C. The airframe was filled with dummy bullet holes and soot marks were liberally applied. John Crewdson then taxied it at high speed across the aerodrome before pulling the wheels up in front of the cameras. A few days later it was set alight as Norwegian peasants attempted to release the trapped aircrew in the final moments of the film.

The remaining TT.35, TA724, had an even more spectacular ending than its partner as it was used to depict a badly shot-up aircraft which careered across the airfield and collided with a fuel bowser. To do this, the aircraft was

Another Mosquito TT.35 was RS718, which later crashed as HJ898 in the wheels-up landing in '633 Squadron', seen here being camouflaged at Bovingdon (Aviation News).



manoeuvred by a 'control line' connected via the wingtip and it was carefully directed into the bowser, the ensuing explosion being sufficient to reduce both the bowser and the Mosquito to ashes.

As with all films concerning World War Two it was the German fighters which caused the headaches and two Nord 1002 four-seaters (French-built Messerschmitt Bf 108s) were painted to represent Bf 109s and were used to strafe the airfield. Both survived and were sold to private owners in the USA although one made a forced landing on its delivery flight and was abandoned on pack ice off the coast of Labrador.

The camera-aircraft for the aerial shots was a wartime B-25J Mitchell light bomber, carrying the civilian registration N9089Z. It became a familiar sight in dereliction at Biggin Hill until removed to the Historic Aircraft Museum, Southend, where it now masquerades as an aircraft of No. 98 Squadron, RAF.

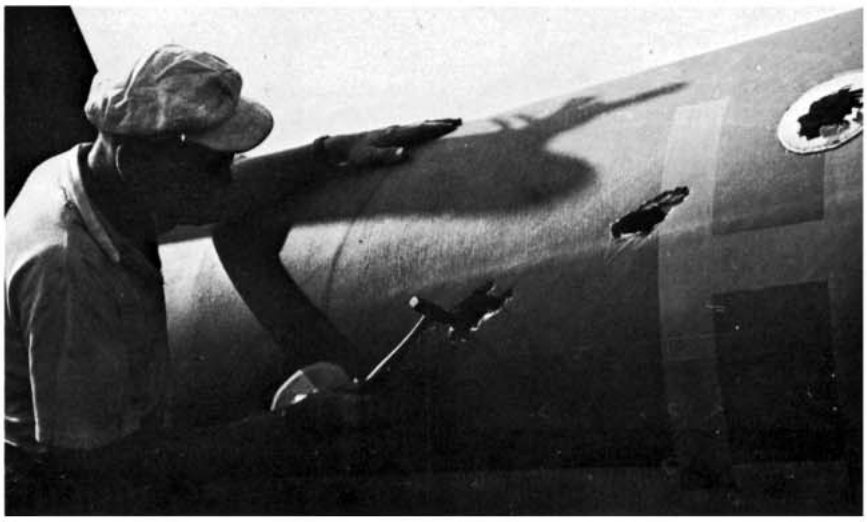
'633 Squadron' was well-received by audiences and five years later it was decided to make a sequel — 'Mosquito Squadron'. Filming was again centered at Bovingdon and the plot was very loosely based on the famous Amiens Raid of 1944 when Group Captain Pickard led the Mosquitos of 140 Wing, RAF, in the precision attack on the walls of Amiens jail in order to release members of the French Resistance.

The film version replaced the resistance members with prisoners-of-war and took the liberty of using 'Highball' weapons to breach the walls as well as lobbing them into a tunnel entrance to destroy an underground stronghold. Interesting tactics as the 'Highball' was a scaled-down version of Barnes Wallis' Dambuster weapon and was in fact intended for use against shipping!

Five years had passed since the original film had been shot and Mosquitos were now much more difficult to find. Two of the originals were still airworthy, one with Group Captain T. G. Mahaddie and the other with the Skyfame Aircraft Museum. In order to obtain more, the Liverpool Corporation's aircraft was leased and so was Hawker Siddeley's, making a total of four — three TT.35s and one dual control T.III.

As with all sequels, 'Mosquito Squadron' was not a patch on the original, many scenes were repeated from the first film — including the spectacular crash of RS718. In fact most of the crash scenes were of this aircraft, a number of cameras having filmed the same crash from different angles! The German aircraft were Hispano HA.1112-MIL Buchons, Merlin-powered 109s. When filming was over all the Mosquitos returned to their owners in more or less the same condition as they were before filming began — no write-offs this time!

It is interesting to note that author Frederick E. Smith has since written a sequel to his original book, this time titled '633 Squadron — Operation Rhine Maiden' but, with only two Mosquitos now airworthy in the UK, it will prove very difficult to film!



Sacrilege! *Above:* **Captain John Crewdson making machine gun battle damage on RS718 with a hammer prior to its deliberate crash sequence** *(top photo)* **as HJ898/HT-G (Aviation News and R. W. Cranham).**

The sad end of Mosquito TT.35 TA724 after its staged crash with a fuel bowser at Bovingdon (R. W. Cranham).

Top and above: **Preservation enthusiasts Stuart Howe and friends rescue the remains of the film star Mosquitos from Elstree Studios.**

Nose section of TJ118, used for close-up cockpit shots, recovered from Elstree Studios by Eddie Reynolds (Stuart Howe).

AIRCRAFT USED

This is believed to be a complete list but parts of other aircraft may have been used.

Serial	Mark	Civil Reg.	Film Serials	Owner	Status	Fate
*RR299	T.III	G-ASKH	HT-E	HSA	Flight	Still flying
**RS709	TT.35	G-ASKA	HT-D/HR113 HT-G	Mirisch Films	Flight	To Confederate AF
**RS712	TT.35	G-ASKB	HT-F/RF580	Mirisch Films	Flight	Strathallan Aircraft Collection
RS718	TT.35	None	HT-C/HJ662 HT-G/HJ898	Mirisch Films	Taxy	Crashed as HJ898
*TA634	TT.35	G-AWJV	HT-G/HJ614	Liverpool Corpn	Flight	Mosquito Aircraft Museum
TA639	TT.35	None	Not known	RAF	Flight	RAF Cosford Aerospace Museum
TA642	TT.35	None	Not known	FAS	Taxy	Undercarriage collapsed
TA719	TT.35	G-ASKC	HT-G/HJ898	Skyfame Museum	Flight	Skyfame Museum
TA724	TT.35	None	Not known	FAS	Taxy	Destroyed
TV959	T.III	None	HT-P/MM398	IWM	Cockpit shots	Imperial War Museum
TW117	T.III	None	HT-M/HR155	RAF	Flight	RAF Museum Hendon

Key * Aircraft used in 'Mosquito Squadron' only
** Aircraft used in both films
FAS - Film Aviation Services Ltd.
HSA - Hawker Siddeley Avn. Ltd.

AFTER THE BATTLE

WRECK DISCOVERY

The Wartime Solomons – thirty years after

by WILLIAM H. BARTSCH

Thirty-three years after I had first heard of Guadalcanal as a nine-year-old in Washington, D.C., the legendary name was becoming a physical reality for me as the Air Pacific BAC-111 slowly circled to land. The onrushing view of the north coast of the island as we descended indeed matched the configuration shown on the maps I had seen — there was Point Cruz jutting out into Iron-bottom Sound, and Lunga Roads, and the fabled airfield itself, Henderson Field, in the distance. The only exception to the map was that a town — Honiara, the capital of the British Solomons Islands — was spread out over where before only an empty plain had been indicated on the map.

It was the afternoon of Wednesday, July 16, 1975, and the long years of waiting to see the Solomon Islands of my childhood memories were coming to an end. One week earlier, I had left Fiji, the jumping-off point for an itinerary of seven weeks through the South Pacific on my way back to my headquarters at Geneva, Switzerland on the completion of my two-year United Nations project there. Already I had spent three days in New Caledonia and four days in the New Hebrides, early US bases in the war against Japan.

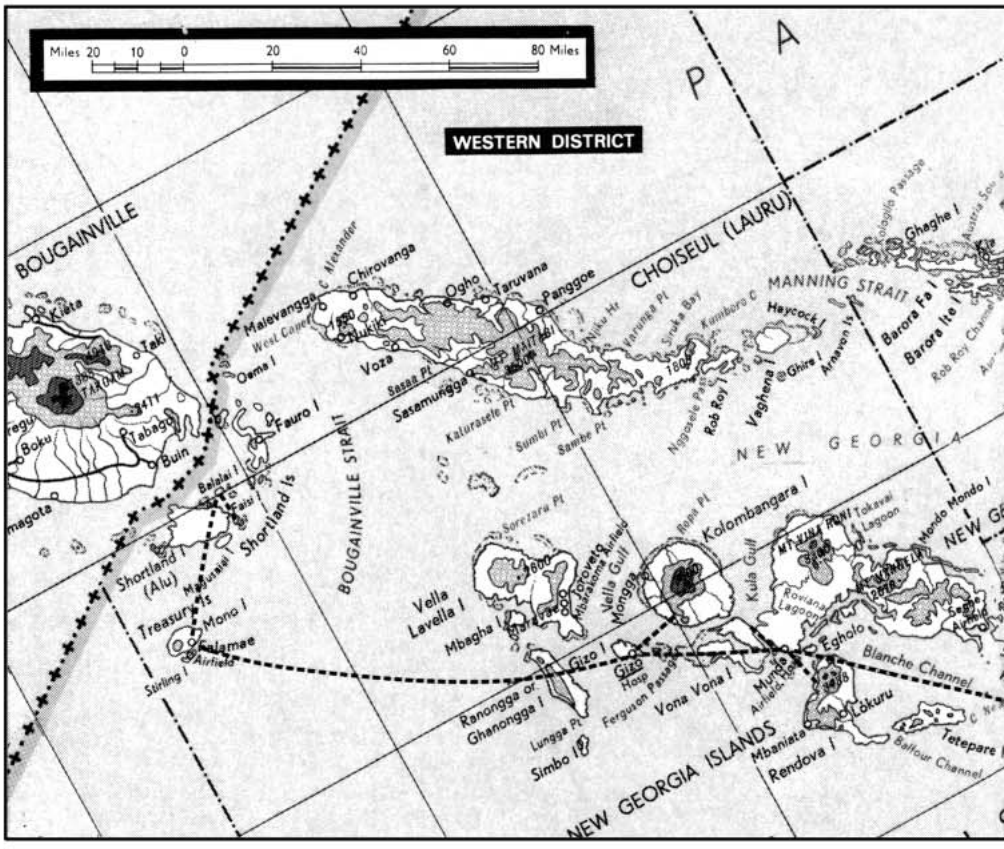
Within a few hours of settling into my room in the Honiara Hotel, I was being given leads on where to find remains of the six-month battle for Guadalcanal of 1942-43 days. The husband of the manageress of the hotel wanted to show me the remains of a crashed US aircraft just outside the town, while Solomon Islands Airways (Solair) pilots — with whom I would be flying through the Islands — knew of other air wrecks I could see. Actually, earlier correspondence from Fiji and collection of scattered information had given me a good idea of where to search for war remains in the Solomons, on the basis of which I had drawn up a seventeen-day travel plan for the Solomons.

My first exploration of Guadalcanal was at the grounds of the Seventh Day Adventist Mission at Betikama, about seven miles east of Honiara and two miles south of Lunga Point, scene of some of the most vicious fighting of the campaign. There I met Dennis Steley, a young enthusiast of the Battle of Guadalcanal who took me on a tour of the war-wreck laden grounds of the Mission. There on display were a reconstructed SBD-5 Dauntless dive bomber, the tail section of another SBD, a Bren-gun carrier, and loads of small-arms. The wings of the SBD had been called the best ones existing today by a representative of Yesterday's Air Force, who wanted to buy them, though unsuccessfully. Dennis told me of the existence of fox holes — the best preserved on Guadalcanal — just beyond the SDA property and of half-buried half-tracks on the Mission grounds, but I did not have time to check these out, for I had an appointment to see the crashed aircraft mentioned by the hotel manageress.

The partly-constructed Douglas SBD Dauntless — the most successful American dive-bomber of World War II — at the Seventh Day Adventist Mission at Betikama, Guadalcanal.

After driving west one mile from Honiara, my guide, Mr. Stoneham, turned off to the left. We hiked up a steep hill and then waded through waist-high kunai grass at the top of the hill. In the deep grass and motionless air, the heat and humidity left me soaked through, but I was rewarded by the view of large pieces of an aircraft strewn over an area of about fifty meters square. There was a V-12 engine, a complete tail section lower down the hill, a wing section connected to part of the fuselage, fairly intact wings, the armor plate behind the seat, and wheel struts, but very little of the fuselage. The most interesting piece — the tail — clearly had 7.7 and 20 mm holes in it; this plane was the victim of a Zero! The guns and cockpit section had been removed. No serial plate was found which could help identify the plane, but it was apparently a Bell P-39 (or P-400) Airacobra, a sitting duck for a Zero in the Guadalcanal campaign.

Early next morning, I set out on my next expedition in the company of twenty Solomon Islanders on the MV 'Merata', a small inter-island motor vessel bound for Tulagi, across Iron Bottom Sound from Honiara. Tulagi had



been the old capital of the British Solomon Island Protectorate until the Japanese seized it in May 1942 (in their deepest incursion to date into the Solomons) and had set up a seaplane base there. I was going specifically to check out a story that the Japanese destroyer *Kikuzuki* was lying in an inlet north of Taroaniara now known as Tokyo Bay, where it has been towed and dumped in shallow water by US forces following its dive-bombing off of Halavu by Dauntlesses from the carrier *Yorktown* on May 4, 1942 and later US occupation of Tulagi.

Arriving at Tulagi at 11.30 a.m., I hastened to the offices of Solomon Taiyo, a Japanese fishing company based on Tulagi which would be providing me with a boat to reach Tokyo Bay. The Japanese officials of the company were all enthusiastic to hear of my interest in the Guadalcanal Campaign and invited me to have lunch with them. One pointed out where eight (actually five) Kawanishi 'Mavis' four-engine flying boats were sunk between Gavutu and Florida Islands, victims of *Yorktown's* second strike on May 4, 1942.

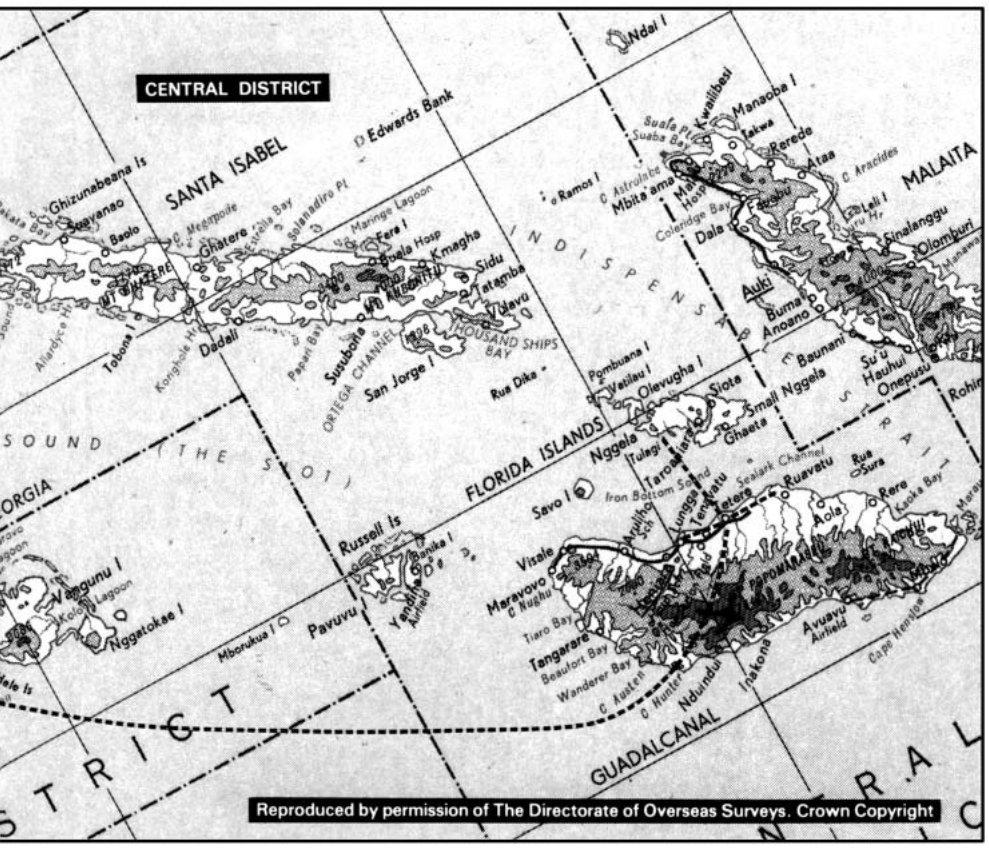
At 1.15 p.m., in a fine rain, I set out in the company ship *Adzuma II* for Tokyo Bay with Mr. Nakamura, who would show me the *Kikuzuki*. We passed by the scarcely-recognizable remains of the Zero floatplane base at Gavutu Island. A little while later, we headed up the inlet leading to Tokyo Bay and there, off to the left, came into view what remained of the Japanese destroyer — the refloated hull with a 5-inch gun lying across the deck, next to another sunken vessel in the shallow water. The *Kikuzuki* had been stripped of all its valuable metal (mainly brass) by scrap merchants. What a dismal end for a proud fighting vessel!

All next day back at Guadalcanal was spent in the company of two young Solomon Islanders, Jude Norua of the Mendana Travel Agency and Henry Sitai of Solair. I had hired a car from Jude's Travel Agency and the two had agreed to take me around to the remaining war sites on northern Guadalcanal.

Our first destination was to what was planned as a World War II sightseeing park

Above: **Only the hull remains today of the Japanese destroyer Kikuzuki in Tokyo Bay, Florida Island after having been worked over by scrap merchants.**

Above: **The son of the now-acknowledged owner of the Grunman F4F-4 Wildcat dragged out of the jungle near Tasimboko, Guadalcanal, poses with the aircraft at its present resting place in a park some ten miles west of Honiara.**



set up by a Solomon Islander, Fred Kona, about ten miles west of Honiara. The main attraction of this park was Jude's father's Grumman F4F-4 'Wildcat' fighter, which had been the subject of much publicity in the South Pacific because of litigation over its ownership. This was one of the few examples of a Wildcat known to exist in the Pacific today, and although the aircraft was still intact, it had deteriorated considerably since 1973 when it was first brought out of the jungle near Tasimboko from Jude's father's property. In particular, the wings no longer folded. Unfortunately, no serial plate could be found to allow us to trace its history.

Continuing west along the coast road we arrived at our second destination, Tambea village, twenty-three miles distant from Honiara, where I had heard of a Zero that had been hauled up from the waters opposite the village. This plane had also been the subject of litigation and in the end was stripped of its guns and cockpit instrumentation and dumped outside the village grounds. There really was little of it to be seen at the time of my visit, a sad commentary on the ravages of fanatic plane collectors today!

Further ravages of historical monuments of the Battle of Guadalcanal were to be found on the return trip to Honiara. At Doma Cove, fourteen miles west of Honiara along the coast road, all that I could find of the Japanese transport heavily damaged by air strikes on November 14, 1942 and beached there early the next morning, was a huge pile of rusting iron plates. The local people say that the ship was dynamited by scrap dealers to get at its valuable metals. Six miles further down the coast, at the mouth of the Bonegi river (near Tassafaronga), about 200 meters out in

One of the remarkably-preserved LVT I 'Alligator' amphibious landing craft to be found at Tetere, Guadalcanal.

Ironbottom Sound, could be seen part of the superstructure of the *Kinugawa Maru*, another of the eleven transports sunk or beached during the epic battle of November 14-15, 1942; the other rear half is said to have fallen off into deep water.

After checking with the local population in the area of Marmara, three miles further down the coast road to Honiara, we finally were on the track of a war remain that I had heard about before coming to Guadalcanal, a US Sherman tank. We found the tank — the last of its type remaining on the island — off the road to Marmara on the left, surrounded by bush and high grass. It was basically intact, except for its missing guns. Later I heard that this veteran of the Guadalcanal campaign had been used for target practice and was unceremoniously dumped at its present site after it had outlived its usefulness.

In the late afternoon, we passed through Honiara to go to the other side of the town to check out a report of a park of 'Alligators', tracked amphibious landing craft, at Tetere, on the coast about eighteen miles east of Honiara. Arriving in the vicinity of the area, we first found five of them disintegrating and rusting on the beach. Was this the so-called 'park' of Alligators? It proved only a foretaste, for just above the beach, in an open area broken by bush and trees, unfolded an unbelievable scene — one Alligator after another in a wide semi-circle. There must have been fifty of them! All were intact, and right side up, though rusting and stripped of equipment. Some still even had the smell of diesel oil inside. These tracked landing craft — the earlier model LVT (Landing Vehicle Tracked) I — were apparently just left here at the end of the war and for some reason were spared the ravages of the scrap collectors over the years. Darkness was fast falling, but I managed to record this scene before heading back to Honiara for the evening.

Early next morning, I left Guadalcanal on board a twin-engined Beechcraft Baron of Solair for the one-hour flight to my next destination, Munda on New Georgia island in the central Solomons. The flight over the brilliant blue and green waters and sandy shores and coral of the lower Solomons was worth the trip in itself!

Arriving at the old wartime airstrip, I checked into Agnes Kera's well-known (and only) guest-house near the strip. Soon thereafter, my guide Alesase Biseli was helping me into his motorized twenty-foot canoe and we were gliding over the clear and calm waters, the cool breeze in our faces. Alesase had been a guide of the Americans retaking New Georgia in 1943 and knew all the battle sites. Swinging westward around the Dragon Peninsula and then northwards, a distance of some fifteen to twenty miles, we checked out Bairoko Harbour and then Enogai Inlet, the area of some desperate fighting in the July-August 1943 campaign to seize New Georgia from the Japanese. The only war remain in the water was that of a small Japanese cargo ship half-submerged in Enogai Inlet.

On land, in the Bairoko area, however, I was surprised to find on the shoreline a live shell, followed by another, then two spent ones. Then, about twenty feet inland from the shore, even Alesase was surprised to discover two piles of unexploded shells, neatly stacked and ready for firing as thirty-two years earlier! One stack comprised about twenty-five shells, the other, a short distance away, about fifty. These, on later research, would appear to have been 4.2 inch mortar shells used in the New Georgia campaign by US forces.

Returning from our exploration of Bairoko, we passed around the western end of New Georgia into Hathorn Sound and Noro Passage to reach Noro headland, known as Ondongga, which during the war was almost completely occupied by two US fighter airstrips built there by Seabees in 1943/44 following the capture of Munda. Given the heavy level of air operations out of Ondongga airfield in the Bougainville campaign — US Navy Corsairs, US Army Air Force P-39s, and Royal New Zealand Air Force P-40s — we were expecting to make some interesting finds. However, after a tiring ninety minute hike in mid-afternoon over the whole largely overgrown airfield, all we found of its wartime use was a jerrycan. We returned to Alesase's canoe at Ondongga landing, which was also built by the Seabees in wartime.

Proceeding another seven miles or so on our way back to Munda, we stopped just short of Munda near Gurasae Point. Alesase wanted to show me two Japanese anti-aircraft guns which were emplaced just inland to fire at US aircraft as they wheeled to return to their base after bombing Munda. But first I had to keep up with him during the half-hour trek over a village path, then a newly-constructed road, and finally over logs to the site of the guns. The guns, intact though badly rusted, and still pointing to the sky, turned out to be the standard Japanese heavy anti-aircraft weapon, 75mm type 88s.

On the final leg of our day's journey back to Munda, we hit a reef and broke a pin and bent a blade of the outboard motor. The reefs are tricky in the area of Munda, and even as experienced boatman as Alesase can be fooled at times.

The next day was devoted completely to exploration of Kolombangara, that almost circular mountain island that looms threatingly over the whole central Solomons and about which I had heard about so much during the war. It was just to the west of south Kolombangara, near Plum Pudding Island, that John Kennedy in PT-109 had been rammed by a Japanese destroyer in 1943 *(see After the Battle No. 9)*.

The weather was fine, and we covered the twenty-four miles from Munda in Alesase's canoe in only one hour five minutes, arriving at 9.45 a.m. at Vila plantation, our destination on the southern tip of Kolombangara. With one of the local people as guide, we walked to the wartime Japanese airstrip, still in use today, in search of a Japanese Zero fighter I had heard was lying in deep bush just off the airstrip. However, we did not have its exact location and spent a good hour before finding it, searching in the deep, dark, spiderwebbed jungle. Lying in an earth revetment, where it must have been struck by a bomb, it was easily recognisable as a Zero from the cockpit area, even though its engine, rear fuselage, and right wing were missing. Someone had clearly stripped the plane before my visit.

After photographing the plane wreck under most difficult lighting conditions, we hiked back to Vila plantation. A police officer we had met had mentioned the existence of 'machine guns' at Ringgi Cove, some three miles to the west of our location. After a fruitless fifteen-minute search in the canoe, we turned back for Vila plantation when shortly afterwards we heard from children on the beach that there were guns near them. The 'machine guns' turned out to be 75 millimeter coastal defense guns knocked from their foundation, most likely by US artillery bombardment from the Ondongga area in August 1943. There were two guns, about thirty feet apart, some twenty feet inland from the shoreline, with two stacks of shells next to them. Also nearby we found two Japanese bunkers made of big blocks of coral and of logs, one at the base of a big tree. It was from these emplacements that the Japanese force on south Kolombangara prepared to defend

itself against the anticipated US invasion that, in the event, never took place when it was decided to bypass fortified Kolombangara for Vella Lavella, further up the Solomons chain.

A storm was brewing, so we quickly departed Vila at 2.20 p.m. but, nevertheless, we were caught in a rainstorm of fierce intensity, with the strong wind and blinding rain in our faces for over a half-hour before making it back to our Munda base at 3.45 p.m.

The next day, Wednesday, July 23, due to the persistent rain in the morning, we did not set out for our destination — Rendova Island, across from Munda — until 1.30 p.m. After checking out a Grumman Wildcat in about ten feet of water in a line off the airstrip — still intact, reported by the local people as having been shot down accidentally when towing a target by US planes — we crossed over the calm water of Roviana Lagoon to really rough open sea separating the Munda area from north Rendova. I held on for dear life as we went up and over one onrushing wave after another, whipped up by a strong east wind. Sea water sprayed into the canoe, soaking me as I hunched to protect my camera in its canvas bag. I really wondered if we would make it across to Rendova, but Alesase was unperturbed. Later, after the fifty-minute ordeal, he remarked that he had negotiated waves of eight feet before, and four foot ones, such as today's, were nothing!

Arriving at the little coastal village of Eghelo, we found our guide who would take us to the aircraft I had heard about that had crashed on Rendova. He took us across the harbour and up a hill to the site of the crashed plane — but all we found was a bomber's wheel and a wheel strut! According to our guide, the plane had crashed and on impact its bombs had exploded. Other small pieces were scattered widely in the bush. The plane I had heard of evidently was on the other side of Rendova, high up a mountain, and would take a day to reach. So much for that!

The return trip to Munda was less terrifying. We negotiated the strait between Rendova and Roviana Lagoon with ease, riding the crests of the smaller waves, the wind behind us.

Early next morning, I did some exploring on land instead, prior to my scheduled flight to Gizo. Alesase had told me of the Kokengolo caves, just a mile west of Munda airstrip, where Japanese had been sealed alive when they refused to surrender. The local Methodist Mission trainee-minister took me to the entrance of one of the biggest caves, near the base of Kokengolo Hill. Peering in through the darkness into a cavernous room, I saw tunnels leading to other rooms deep into the huge hill. A snake was lying asleep, curled up at the entrance, and my guide indicated there were many others inside. That was enough to dampen my enthusiasm to explore the cave! The entrance I believe was the one Alesase had mentioned that he had opened for visiting Japanese a few years earlier and from which forty-seven skeletons were removed at that time.

Back at Munda, our Solair 'Islander' took off an hour earlier than scheduled, stopping first at Ringgi Cove, and then on to Gizo. I had originally planned to continue on to Barakoma, on Vella Lavella, but that would have meant I would have to take a canoe over the seven miles of open sea — Gizo Strait — to return to Gizo for my next day's flight to Ballalae. However, after that hair-raising canoe ride on the open sea the day before, I decided to scrub the Barakoma sidetrip and remain at Gizo for the day, particularly since I was feeling feverish from some bug.

At 9.25 a.m., on July 25, we winged our way in a Solair Beechcraft Baron from Gizo airstrip to Mono and then on to Ballalae, the most important destination of the Solomons trip. The pilot managed safe landings at both Mono and Ballalae, despite strong, turbulent cross-winds blowing at both island airstrips.

Near the shore at Vila Point, Kolombangara Island, can still be found this Japanese bunker of coral blocks and iron.

A quick reconnaissance by foot into the bush off each side of the Ballalae strip confirmed reports I had heard that the tiny, triangle-shaped island was a virtual treasure-chest of Japanese aircraft. But we had to leave the island now as there was no accommodation for staying there overnight — we would be staying at nearby Poporang Island, in the Shortland Group. The motor-launch taking us to Poporang required one and a half hours to cover the six miles of rough water to Nila, the main village of the island and site of the Catholic Mission of Father Lawrence Isa, with whom I would be staying until the return flight east to Honiara the following week.

The Nila area itself was an important destination in my itinerary. It was the site of a major Japanese seaplane base in 1942-43 and was reputed to have considerable remains of its wartime period. Father Lawrence told me of Japanese activity there during those years, when he was an eighteen-year-old. The Japanese had apparently been on good terms with the local population and were not opposed by the natives, unlike the case further down the Solomons.

Father Lawrence confirmed the existence of several floatplanes a few hundred meters up from the Mission, lying on land just beyond the shoreline. Checking these out the next morning, I found the largely intact remains of six Mitsubishi F1M 'Pete' biplane floatplanes, minus wings and engines, lying near each other in the bush. According to Father

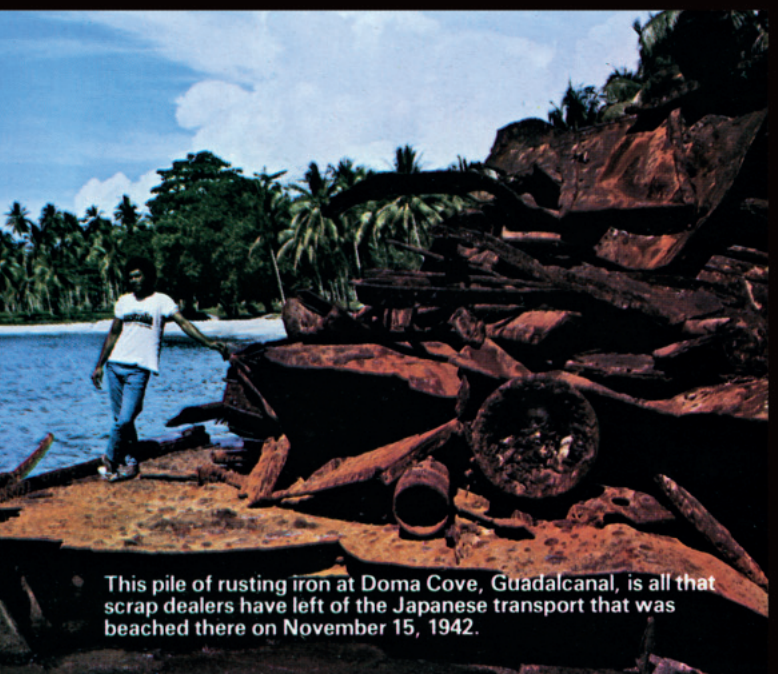
One of the six Mitsubishi 'Pete' floatplanes, possibly strafed in an American attack on March 28, 1943, to be found near the Roman Catholic Mission at Nila, Poporang Island.

This Shortland youth discovered a 7.7mm machine gun near the pile of 'Betty' engines and tails on Ballalae.

Atesase Biseli with the pile of live mortar shells discovered just inland from Bairoko Harbour on New Georgia Island.

Moses with a 75mm Japanese anti-aircraft gun, once an effective weapon against the Allied aircraft attacking nearby Munda airstrip on New Georgia.

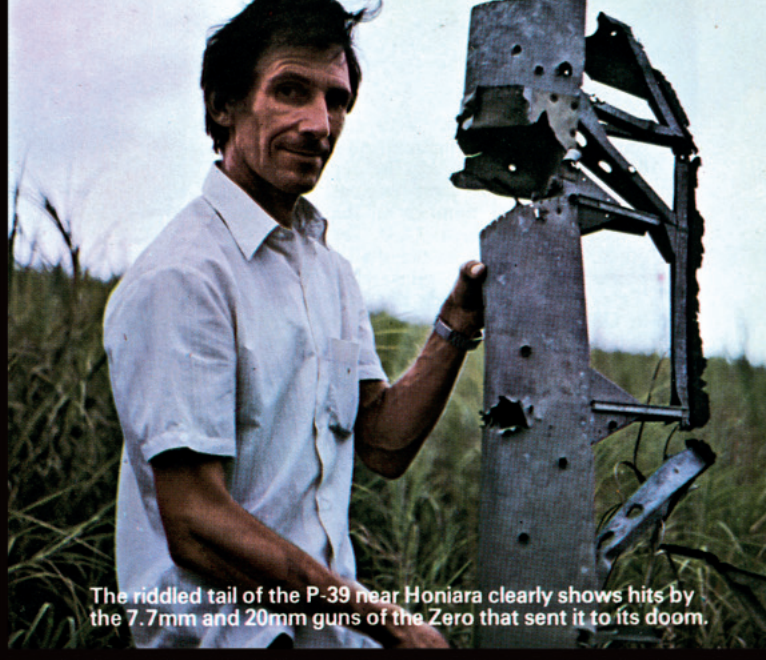
William Bartsch's guides on Guadalcanal sit on a General Sherman tank on the island.



This pile of rusting iron at Doma Cove, Guadalcanal, is all that scrap dealers have left of the Japanese transport that was beached there on November 15, 1942.

Shortland boys enjoy rotating this Japanese radar scanner up in the hills of Poporang Island.

Its nose still assuming an aggressive pose, this G4M 'Betty' on Ballalae is intact except for its missing engines.



The riddled tail of the P-39 near Honiara clearly shows hits by the 7.7mm and 20mm guns of the Zero that sent it to its doom.

...ribed through the only surviving US

This is the only remaining Zero fighter on Ballalae today, basically complete except for its rear fuselage and tail.

One of the six Mitsubishi 'Pete' floatplanes to be found near the Roman Catholic Mission at Nila, Poporang Island.

A Japanese motorcycle and sidecar on Poporang Island, intact except for its missing tyres.

Lawrence, the 'Petes' were strafed on the water by raiding US fighters and subsequently dragged up on land by the Japanese, who stripped them of their engines. One still carries its serial number on the lower rear fuselage — Mitsubishi 1250. There were two other 'Petes' lying in the shallow water opposite the site of the land wrecks. These eight 'Petes' may be the eight floatplanes reported in USAF records as burned on the water at Poporang by five P-38s and one F4U on March 28, 1943.

In the afternoon, a group of enthusiastic local youths led me up the island to Poporang Hill to show me the considerable remains of the Japanese occupation. First we came across a huge radar scanner that could still be swung around, then a searchlight in a ditch, followed by three 6-inch coastal defense guns in their turrets in revetments in different locations. A motor-cycle and sidecar was an unusual find. Finally, we saw two underground bunkers. Poporang Island was clearly heavily defended by the Japanese; it was fortunate that it was bypassed by the Allies.

After returning down the hill to the Mission in late afternoon, I inspected the remains of a large, three-place floatplane, the fuselage and pontoons of which were lying on land just off the pier at Nila. According to Father Lawrence, in 1972 an American enthusiast lifted the plane, which was intact except for its wings, from the water just beyond the pier, with the intention of exporting it. However, the Solomons Government refused to permit it to be sent out of the Islands, and so it ended up in pieces in its present location. Its two big pontoons and fuselage configuration confirmed that it was an Aichi E13A 'Jake' reconnaissance seaplane, a rare find today in the Pacific.

Just across from Poporang lies Faisi Island, another part of the Japanese defense complex in the Shortlands. We had arranged to explore the small island for war remains, and the next day travelled in the local malaria team boat for half-an-hour over rough water to reach it. In intermittent rain, we first found a 12-cylinder 6-wheeled truck and, after ten minutes hiking, we made our only interesting find on the island — a badly smashed single-engined plane near a huge rock, its wings supported on barrels. Although its whole forward fuselage area was missing, its distinctive tail, dive brakes, fixed landing gear, and wheel spats left no doubt in my mind; we were looking at an Aichi D3A 'Val', the workhorse dive bomber of the Japanese Navy in the 1941-44 period. Closer inspection of its tail revealed its code marking, Q-215. This indicated that the 'Val' was in the 2nd (later, 582nd) *kokutai,* based at Buin, Bougainville from October 1942. An old resident of Shortland told us that he recalled this 'Val' crashing on return from an attack on Tulagi. A check of Japanese records indicated that 'Vals' from the 582 *kokutai* indeed struck at Allied shipping at Tulagi in April 1943 during the 'I Go' operation and that at least four were lost. Our 'Val' may have been one of these, although it could also have been lost returning from some other attack on the lower Solomons.

Shortland boys rest on one of the three Japanese 6-inch coastal defence guns emplaced on Poporang Hill which are being steadily reclaimed by the jungle undergrowth.

The fuselage of the Aichi E13A 'Jake' reconnaissance seaplane dragged up on shore at Nila and dumped near the pier.

Three days later, on Wednesday, July 30, after recovering from a bout of flu, the long-awaited day for the trip back to Ballalae had arrived. I had arranged for a half-day charter of the MV *Rawaki,* the vessel that had taken us from Ballalae to Nila five days earlier, for the round-trip, and to cement good relations with the two crew and four others who would be accompanying me, brought along the ingredients for a big lamb curry lunch — with beer!

Arriving at Ballalae pier at 10.35 a.m., we were met by Martin Ferguson, the local caretaker of the island. Martin could not accompany us, but his brother Francis could, and he was vital in our search activities, since he knew the location of every plane wreck on the island. With only about seven hours at our disposal before we would have to return to Nila for the night, we could not afford to waste a minute of time in blind searches.

Working one side of the airfield, we set out into the deep bush skirting the airstrip. We soon located a huge Mitsubishi G4M1 'Betty' bomber lying upright on its wheels in a revetment, intact except for its cockpit instrumentation and two-thirds of its right wing. It was the first 'Betty' I had ever seen, and I was impressed! We spent an hour crawling through its fuselage, inspecting it closely, and photographing it.

A little further down in the bush, we found our second 'Betty', also in remarkably good condition, though its two engines had been removed. Unlike the first 'Betty', both wings were intact. This plane was more covered with jungle growth, and its tail section was completely gripped by overgrowing tree branches.

After having our curry lunch back near the pier, we returned to the same side of the airfield to continue our explorations. Francis led us to one of the most interesting finds on Ballalae — an Aichi D3A2 'Val' on its nose at a 45-degree angle in a heavily-wooded area. This plane was also virtually intact, and one could still read its tail code, A I. Subsequent research indicates that it operated from the carrier *Shokaku* (I) of the First Carrier Division (A) in 1943. Since the only time that the *Shokaku's* Vals were active in the Solomons that year was during 'Operation

Ro', on November 1-12, 1943, opposing the Bougainville landings at that time, it would appear that it was one of the thirty-eight Vals lost in the operation, evidently blown-up in its revetment.

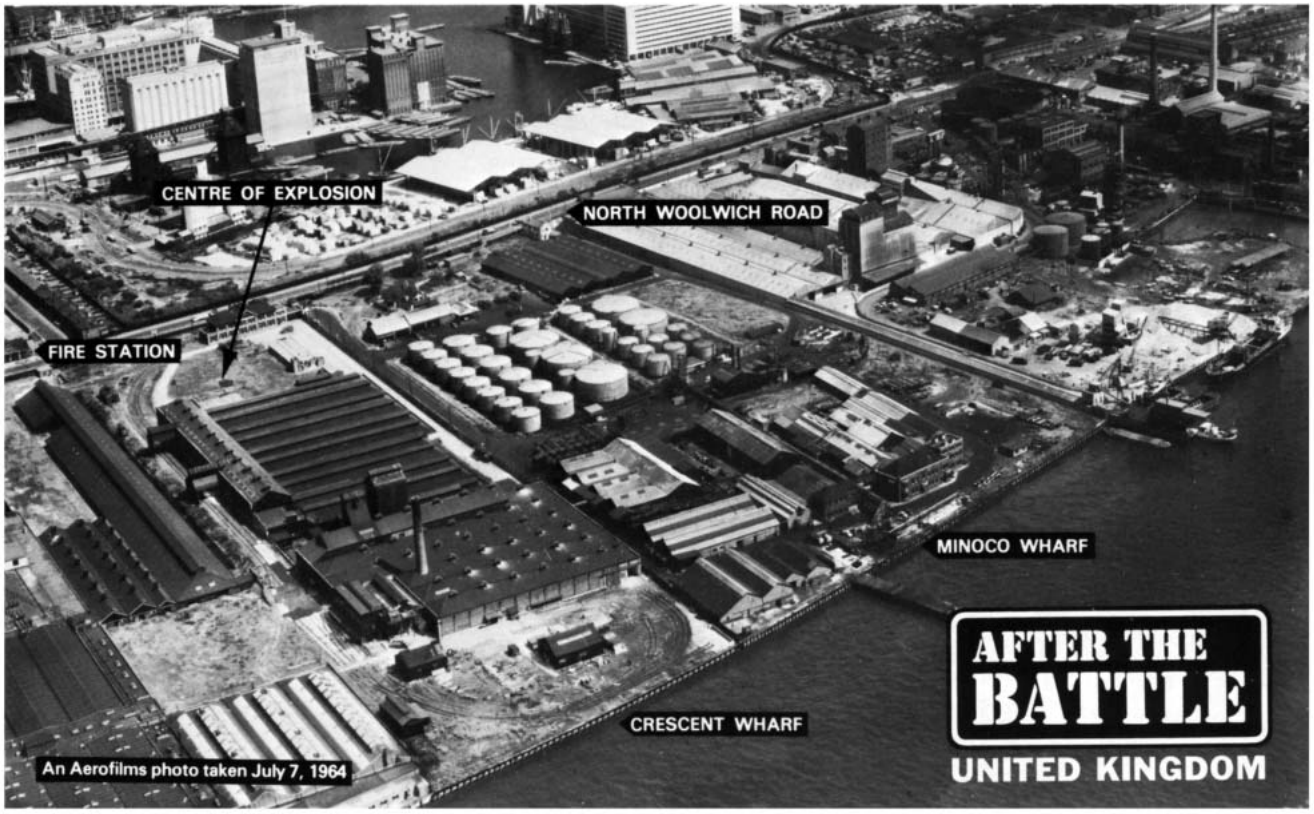
We then were led to a strange sight near the end of the airfield: a pile of about ten engines and five tail sections of other 'Betties'. One of the boys also found near the pile an intact, though heavily-rusted, 7.7mm machine gun from a 'Betty'.

Crossing over the airfield to the other side, we plunged anew into the jungle. We soon located a third 'Betty', in poorer condition than the others, with the rear half of the fuselage broken off and engines fallen on the ground. Only about 100 meters behind her, yet another 'Betty', in even worse condition, but with the merit of having a clear code on its tail, the first we had found on a Betty — U2-323. Subsequent investigation indicated that this Betty (and perhaps the others) was from the 702 *kokutai,* which operated at times from the advanced base of Ballalae. Finally, a bit further up, we found the last G4M, its rear fuselage and tail twisted and partly buried, but its cockpit and forward fuselage in very good shape.

We were now fully satiated with Betty discoveries and the monotony was ended with the discovery of two badly broken up Zero fighters, lying near one another, one comprising only a half-fuselage section. However a little distance away, we were rewarded with a very interesting Zero wreck. This was an early A6M2 model in relatively good condition, with its wings, cockpit area, and engine intact, but its rear fuselage and tail missing. While it was not possible to identify its unit because of the absence of the tail, a single white chevron just beyond the fuselage *hinomaru* would seem to suggest that it served in the First Carrier Division during the 'I Go' operation of April 1943, when Admiral Yamamoto deployed most of his land and carrier-based aircraft in an unsuccessful attempt to destroy Allied air power in the Solomons.

Dusk was now descending rapidly on our Ballalae trip and indeed on my whole Solomons journey, for Ballalae was the last stop through these war wreck-laden islands. In little over two weeks I had managed to cover most of the battle-sites of the major Pacific War area of the fifteen-month period from August 1942 to October 1943. Much more remained to be seen in less-accessible areas of the Solomons, but that would have to be saved for another day.

Above: **One of the best-preserved examples of G4Ml 'Betty' bombers to be found on Ballalae Island.** *Below:* **An Aichi D3A2 'Val' dive-bomber from the carrier Shokaku, still lying on its nose on Ballalae, 32 years after its destruction.**



LARGEST WARTIME EXPLOSIONS

Both the First and Second World Wars produced their share of superlatives — for having something bigger or greater than before — and each war was able to claim the largest explosion, at the time, in the United Kingdom.

Silvertown, London, January, 19, 1917

by FRANK SAINSBURY, FORMERLY BOROUGH LIBRARIAN FOR WEST HAM

In 1914, the war that was to be over by the first Christmas settled into the grim attrition of artillery barrages and trench warfare. Although the German chemical industry was probably better geared for the transition to the manufacture of explosives, neither side realised the tremendous quantity of ammunition that would be required during the next four years.

One of the British firms heavily engaged in explosive manufacture was Brunner, Mond & Co., now surviving as the Mond Division of Imperial Chemical Industries in Cheshire. In the spring of 1915, Lord Moulton, the Director-General of Explosives Supply, realised that the capacity for purifying TNT was insufficient to meet demand. The process of purification was far more hazardous than the actual manufacture of the explosive and, for this reason, it was not desirable to have both operations situated in the same factory. In a contemporary account, Lord Moulton has described how a factory in Silvertown on the eastern edge of London came to be chosen for the purification process:

'We had established a place at Rainham which was well removed from any habitation and was very suitable in every way for the purpose of purifying crude TNT, but this was obviously insufficient . . .

'I heard, I think, from a member of the firm of Chance & Hunt, that these works at Silvertown were standing idle, and that they were the only works he knew of which were capable of being adapted . . .

'Accordingly, we communicated with Messrs. Brunner, Mond & Co. and, although there was no formal commandeering of the works . . . yet practically we requisitioned these works, and put them into the hands of Brunner, Mond and Co as our agents to adapt them to this process of purification . . . '

The choice of the Brunner, Mond factory at Crescent Wharf, West Silvertown was extremely unwise, being flanked on the west by the plywood and packing case works of Venesta and, far more dangerously, on the east by the oil depot of Silvertown Lubricants Ltd. Within a quarter-of-a-mile to the north was a residential district occupied by approximately 3,000 people, a church, a school for 800 children while an even larger population lived only three-quarters of a mile to the east. Other factories in the neighbourhood included the soap works of John Knight Ltd, 'Silver's India Rubber, Gutta Percha and Telegraph Works, James Keiller's preserves, Tate's sugar refinery, several other oil refineries and a varnish works.

The Crescent Wharf factory was originally established as an alkali works but was relegated as a standby plant for caustic soda about 1910-12. It was appreciated that, in usual times, the risk of selecting such a dangerously-situated factory would not be tolerated but, as Brunner, Mond's official history states, the urgency was so great that consent was eventually given.

In September 1915, TNT purification at Silvertown commenced. The process involved:

1) Melting about five tons of crude TNT at a time in a large melt-pot.
2) Dissolving the molten TNT in warm alcohol.
3) Applying a partial vacuum which cooled the solution and crystallised the TNT.
4) Running the crystallised TNT and the residual alcohol into 'centrifugals' which removed the bulk of the alcohol and carried away with it most of the impurities.
5) Digging out the crystallised TNT and repeating the melting and dissolving process again to remove the last traces of impurities.
6) Cooling, removing and packing the purified TNT in 50lb cotton bags.

The advantage of the plant at Silvertown was that practically the whole of the necessary apparatus was already there with the exception of the special melt-pot for the TNT. A special housing for the latter was constructed at the top of the building and the only other operation required was the thorough cleaning of the premises to remove all traces of caustic soda from its earlier use. (Unfortunately, caustic soda is particularly inimical to the TNT process but, in spite of this fact, the crystallisation of sodium carbonate continued in the southern portion of the Silvertown factory!)

The whole cost of production was borne by the Ministry of Munitions and the firm received a commission of 5/- per ton of purified TNT produced — amounting to about £750 per year. There was a separate work force of 63 (organised into three shifts of 21 each) for the TNT process which was kept entirely separate from the other operations at Silvertown and confined to the one building at the North Woolwich Road end of the Wharf.

On Friday, January 19, 1917, the afternoon shift came on at 2.00 p.m. and consisted of 20 personnel (one absent) disposed through the plant as follows:

At the foot of the hoist, loading crude TNT for lifting to the melt-pot room: two women, Hetty Sands and Ada Randall.

Packing finished TNT: Forelady Emily Farrow and four other women.

On the still room stage: Alice Davies and Lottie Ablett working on the TNT dust commode for swept-up TNT particles.

Working on the centrifugals: five men including a youth, James Arnell.

Working on the dissolvers: two men.

Working above the melt-pot loading the crude TNT into the hopper: Walter Mauger and a young woman, Catherine Hodge.

A greaser, the leading hand for the shift, Edgar O. Wenborne, and, in addition, a cooper and his mate were working on the ground floor unheading casks of crude TNT for the two women at the foot of the hoist.

The following account of what happened is taken from the eye-witness accounts of the survivors. About 6.40 p.m., Hetty Sands went up the staircase to the melt-pot room to see if any more bags of crude TNT were required or if the room was full for the time being. There were 15-20 bags up there and Mauger was just taking the final three bags off the hoist from their last consignment up while Catherine Hodge was cutting the strings of bags with a small pocket knife and emptying them into the hopper to the melt-pot.

There was a certain amount of TNT spilt on the floor but no heaps and all was going on quite as usual. The hoist platform was at rest and secured in position by its catch. As Mauger said they had enough TNT to be getting on with, Hetty Sands rejoined Ada Randall downstairs and they went to the ladies' lavatory on their way to tea. As they passed the clock at the main door, Hetty noticed that the hands pointed to 6.45 p.m.

About two minutes after they entered the lavatory (about 120 yards south of the TNT building) Hetty heard two faint reports 'like an iron door being banged' and told Ada Randall to run out and see what it was. Ada at once came back shouting, 'Good God! It's all afire'.

Rushing out of the lavatory together, they saw the top of the melt-pot room blazing whereupon they hurried across a bridge over a large surface drain where they met Alice Davies from the still room and made for the corrugated-iron fence of the Venesta Works next door. While they were considering how to get over the fence the explosion occurred knocking the fence down.

Alice Davies later described how she went to the main entrance to see the time and the clock then said 6.48 p.m. Prior to going out, she had heard a noise like the 'shuddering' of a door but had taken no notice of it. On her way back upstairs to the still room, she saw a reflection of a fire above, ran out and met Hetty Sands and Ada Randall. She reckoned that she was the last of the nine women to leave the plant alive.

While Hetty and Ada were on their way to the lavatory, James Arnell was sweeping up spilt TNT and alcohol on the floor of the centrifugal's stage when, on looking round to pick up his broom, he saw red drops like molten glass falling from the melt-pot room above. He ran to the door and through the works shouting, 'Fire!', climbed the Venesta fence and made his way out to North Woolwich Road. He stood there for three to four minutes watching the fire when the explosion occurred knocking him down and temporarily blinding him. He was otherwise practically uninjured.

The foreman, Edgar Wenborne, must have seen the molten drops at the same time, as Arnell heard him shouting from the ground floor for all above to come down. Wenborne shouted to the women, 'Run, girls, run!' and

Above: **The rear of the row of terrace houses in Fort Street. In the background the Fire Station practice tower (West Ham Library).** *Below:* **The houses have gone to be replaced by a refuelling and servicing depot for lorries belonging to the Rank-Spillers group.**

then ran to Dr Angel, the superintendent chemist, who was about to have dinner, shouting, 'Mr Angel! Mr Angel! Come quick!'

Frederick Blevins, assistant works chemist on the laboratory staff, heard his friend Saunders (who had just left him after a game of draughts) shouting that the place was on fire. He ran out from his cubicle above the lab and saw (as did Hetty and Ada) the top of the melt-pot room burning fiercely. He went back for his coat and hat (!) and at once ran out towards the main gate warning everyone he met to run for their lives. On reaching the time office he turned back to try and find Dr. Angel, met him apparently on his way from the plant and begged him to run. The doctor, 'seemed to be going to do something at the office — telephone or something'. Blevins then ran back through the gate into the road and meeting the firemen coming in, warned them that an explosion was imminent but before he had got far down the road he heard a 'terrific rumble' and was thrown over and over.

Silvertown Fire Station was situated, strategically, just opposite the works and Supernumerary Fireman T. R. Betts (son of the officer in charge) was on watch at 6.45 p.m. Mr. Betts is still alive and living in East Ham and this is his own account (after nearly sixty years): 'Suddenly there was a huge, red glow in the sky coming from the Munition Plant. I ran into the station and gave the alarm. The Duty officer ordered the appliances and, within two minutes, the Motor Escape and Motor Pump with crews, under the direction of my father, were on the way to the plant. I immediately sent the call to headquarters by telephone urging them to get all help possible. Whilst so doing, there was a terrific bang and when I came round I was in London Hospital.'

There was scarcely time for the firemen to commence work or for Dr. Angel and Edgar Wenborne to organise the men of the shift before the fire reached the main concentration of TNT.

As near as can be determined, it was at 6.52 p.m. that Brunner, Mond's premises were turned into a gigantic bomb. Molten metal, stone and bricks together with hundreds of tons of earth rained down on the surrounding neighbourhood. All buildings within 400 yards were completely demolished and this included Venesta's works. Two of Silvertown Lubricants' oil tanks were torn open and set on fire. The fire station and several streets of small houses were demolished and flying molten metal set the two flour mills alight together with a ship in the dock, the *SS Itala.*

The mills were completely gutted. St. Barnabas Church and Hall were severely damaged as was the Boys' School and the Girls' and Infants' Schools were practically destroyed. Such was the force of the explosion that a gas holder on the other side of the Thames was demolished and a boiler weighing 15 tons was hurled into the air into North Woolwich Road.

Up to 500 yards radius from the explosion, houses were partly demolished and, beyond 650 yards, damage was largely limited to broken windows, doors and ceilings although there are accounts of the effects being felt throughout East London. The sound of the explosion was heard 50 miles away in Cambridge. Altogether 60-70,000 properties in London were affected in some way by the explosion. (Compensation totalling £3 million, perhaps £30 million in today's terms, was subsequently paid out to persons and properties).

Considering the force of the explosion and the nature of the neighbourhood, the casualties were remarkably few. Sixty-nine people were killed with four of the seriously injured subsequently dying bringing the total to seventy-three. At Brunner, Mond's itself, out of the nine men on the shift, only the boy James Arnell escaped but, of the women, only Catherine Hodge in the melt-pot room died. The cooper's mate, working on the ground floor, died although the cooper himself got out alive. Dr. Angel was also killed when he returned to the plant. Other fatal casualties included two firemen and three members of firemen's families in the cottages attached to the station; an engine driver on the goods line nearby and the local policeman. Ninety-eight persons were seriously injured and 328 suffered slight injuries although a further 600 people were believed to have been treated in the streets or by private doctors.

The explosion had cut off communications with other areas of London and about half-an-hour elapsed before the first help arrived from outside. Fire engines and a river fire-float arrived from the London County Council with other engines from East Ham, Stratford, Canning Town and Ilford. The acting superintendent of the West Ham Brigade, having got his men working, began looking for the Silvertown men only to find them lying beside their badly damaged fire-engines — two dead and one gravely injured.

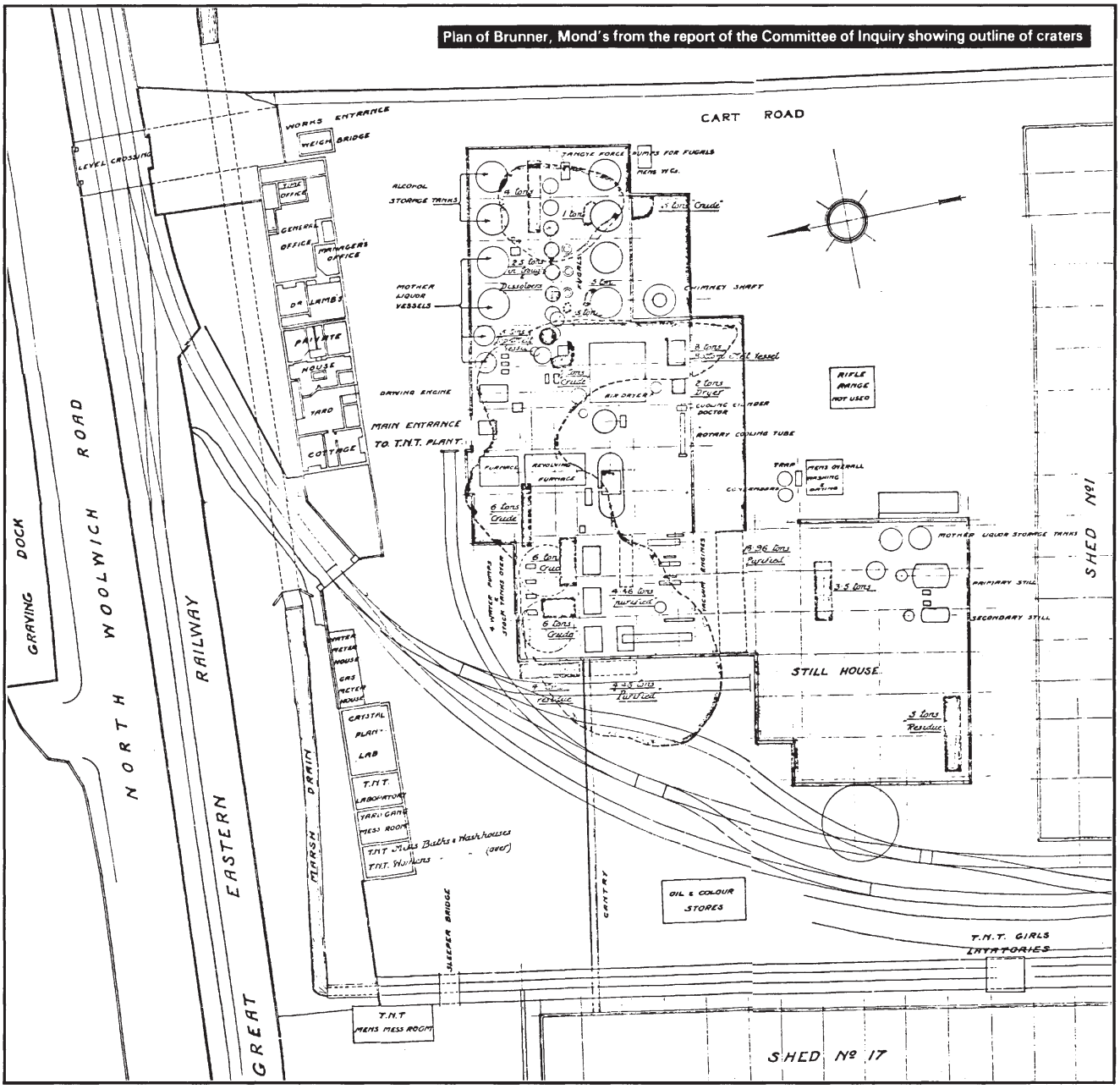
The fires raged throughout Friday night and all day Saturday. One of the buildings which gave the firemen the most trouble was the flour mill and immense volumes of water were poured in it before the fire was brought under control. It was not until Sunday afternoon that the flames were finally subdued.

On the following Tuesday, January 23, the Government announced that it had decided to conduct an inquiry into the cause of the explosion and a three-man Committee of Inquiry was formally set up. The Committee examined 36 witnesses from Lord Moulton to the sole male survivor on the fatal shift, James Arnell. When the Minister of Munitions was asked in Parliament in April 1917 when the findings of the Committee would be published he announced that the report would not be made public because it dealt with matters which would furnish information to the enemy.

Wild rumours were already circulating about the explosion being the work of German agents and the Government's secretive attitude only increased public suspicions. The Government had, in fact, sent two agents to Silvertown the day after the explosion to listen and talk to people. The major in charge reported that 'persons of every class' thought the explosion was 'not an accident'. One wild theory was that the Germans had two invisible Zeppelins which generated their own gas as they moved (and which presumably had bombed the factory) and other people held views that: It was the Kaiser's birthday

Above: **Silvertown Fire Station photographed before the explosion.** *Below:* **Although it was the nearest building on North Woolwich Road to the explosion, miraculously the tower remained standing.** *Bottom:* **Demolition under way (West Ham Library).**

Plan of Brunner, Mond's from the report of the Committee of Inquiry showing outline of craters



Above: **This is the second replacement fire station to the one destroyed, this latest building being opened on August 13, 1969.** *Right:* **Ex-fireman Tom Betts beside the railway line at the entrance to the old Brunner, Mond factory, just opposite the fire station where he was on duty on January 19, 1917.**

therefore an explosion would happen somewhere; Sir Alfred Mond was a German — funny the explosion took place the day he started his holiday, and that there were German agents at Brunner, Mond's. Even today some old East London residents are convinced the Silvertown explosion was the work of German spies.

In 1957, under the 40-year rule, the seventeen-page report was de-classified although still marked 'Secret'. Our researcher for this story, Frank Sainsbury, formerly Borough Librarian for West Ham, had considerable difficulty in establishing the whereabouts and even the existence of an official report and it was not until 1974 that it was located in the Public Record Office. Frank Sainsbury was the first to make an application to see it. It revealed that 83 tons of TNT were on the premises plus nine tons of what was known as 'TNT oil' — the waste of alcohol and impurities from the dissolving and centrifugal processes. The 83 tons comprised 28 tons of crude TNT, 27 tons in process through the purification plant, and 28 tons of purified TNT. It was established that 53 tons of TNT contributed to the explosion and that the remaining 30 burnt away in the resultant fires, together with four tons of the oil. Five tons of the TNT oil was, amazingly, recovered!

Basically the report stated that no direct evidence was available for the Inquiry to determine definitely the originating cause of the fire. The only two workers who, it was to be supposed, witnessed the commencement of the outbreak (Mauger and Hodge) both lost their lives. However, in view of the still-persisting local belief in the sabotage rumour, which was fully investigated by the Committee at the time, it is interesting to quote this section of the Report in full:

'Careful investigation by police and other authorities has so far failed to discover any direct evidence that this disaster was maliciously caused. The character and antecedents of all the employees at Messrs. Brunner, Mond's factory, at H.M. factory, Rainham, and at Messrs. J. W. Leitch & Co.'s factory at Huddersfield have been gone into, and no suspicion attaches to any one of them. As we have already stated, we are satisfied that it is in the highest degree improbable that any unauthorised person was or could have been upon the premises on the night in question. Nevertheless the possibility that the disaster was in some way due to enemy agency cannot in the circumstances be overlooked. We know that elsewhere, and especially in the United States, the activities of enemy agents have been directed to interference with the munitions supply of the Allies, and we have reliable information that members of certain hostile organisations in the United States have recently been trained by German experts in the art of using high explosives "for use in the U.S.A. or any other place where they could cripple British interests." It is obvious that the enemy would be attracted by the project of blowing up a T.N.T. factory situated in a populous part of the East end of London. To achieve this object it is by no means necessary that they should have an agent upon the spot or in the factory itself. It is known that strong alkalis decompose T.N.T. to such an extent that if a stick of caustic soda is introduced into molten T.N.T., even at a temperature as low as 82° C., the liquid in a very few seconds bursts into flame. If, therefore, a stick of caustic soda had been inserted into one of the bags of crude T.N.T., either during the operation of packing at the factory of origin or in course of transit to Messrs. Brunner, Mond, it is reasonable to suppose that the contents of the bag would be emptied into the melt pot without the presence of the caustic soda being detected. The contents of the bags were not examined before they were emptied into the hopper, and the result would be that the caustic soda would in a few seconds start a fire which would quickly spread to the whole of the contents of the melt pot. We have ascertained that the T.N.T. which was being used on the 19th January was almost certainly lot 602 or 603, and lot 617 from J. W. Leitch & Co., of Huddersfield. Lots 602 and 603 left Huddersfield by rail on the 9th December for Dagenham Dock Station, whence they were taken on the 22nd and 23rd December by barge to H.M. factory at Rainham. They were then taken by motor lorry on the 11th and 12th January to Silvertown. Lot 617 left Huddersfield on the 19th December for Dagenham Dock Station for Rainham, and was sent from Rainham to Silvertown on the 18th January by motor lorry. Inquiry shows that these lots were mostly packed in barrels and kegs. These barrels and kegs coming from Leitch's works often arrived at Rainham with the lids broken in or missing and with the bags of T.N.T. exposed. It will be seen that the journey from Huddersfield to Rainham by rail and barge took many days, and it would have been a matter of no great difficulty for an agent to gain access to one of these bags and insert a piece of caustic soda in it. If no precautions were taken the caustic soda would at once set up chemical action on contact with the T.N.T., but Mr. Dupre, who has carried out experiments for us in this matter, points out that any chemical action of this kind could easily be avoided by some such simple expedient as protecting the caustic soda by a coating of shellac, varnish, or even tissue paper, when, in his opinion, it would remain unaltered for a considerable period, and would have no chemical effect upon the crude T.N.T. until it was subjected to the heat of the melt pot.

'No doubt some other chemical or some mechanical contrivance might be introduced for a similar purpose.'

The funerals of the victims, as was more customary in those days, was an occasion of much public ceremony and expression of grief. There were two public funerals; one for the two firemen and for two firemen's children and the other for those of the victims whose families wished to participate. Both funerals took place in West Ham Cemetery, the latter idea being taken up by eleven families (although a few victims were buried in East London Cemetery). Dr. Angel was buried almost secretly at the latter.

Frank Sainsbury, author for this article, stands beside the grave of the two firemen (Henry Vickers and Frederick Sell) killed in the explosion. The grave No 119885/119888 at West Ham Cemetery also contains the remains of two firemen's children.

The memorial marking the grave of Dr. Andrea Angel in East London Cemetery.

Today the site of Brunner, Mond's in North Woolwich Road is occupied by a firm of transport contractors, J. Spurling, Ltd. No trace can be seen of the extensive damage and even the fire station, rebuilt by the Office of Works on behalf of the Ministry of Munitions in 1917, was demolished again and replaced by a modern building which was opened in August 1969. However one reminder does still remain, tucked away behind the railway line, beside the entrance to Crescent Wharf. Here Brunner, Mond erected a war memorial to their dead and included on it are the names of Dr. Angel and the employees killed in the greatest explosion in the United Kingdom during the First World War.

An Aerofilms photo taken October 29, 1950

21 Maintenance Unit, RAF Fauld, Staffs. November 27, 1944

by JOHN REED

Shortly before 11.10 a.m. on the morning of November 27, 1944, a Royal Air Force armourer picking his way along a dimly-lit tunnel beneath a Staffordshire hillside, turned in alarm as he heard the sound of a small explosion from somewhere in the maze of small caverns that he had just left.

Nearly one hundred feet above him, the farmworkers at Upper Castle Hayes Farm watched as the car in which their employers, Mr. and Mrs. Goodwin, made its way down the narrow farm track towards the main road at Fauld. For them it was a perfectly normal Monday morning. It was however to be their last, for the small explosion that had so alarmed the airman was merely the forerunner of the largest-ever explosion in the United Kingdom. Within seconds all trace of Upper Castle Hayes Farm and its occupants had vanished. All that remained where once it had stood was a yawning crater eighty feet deep, and covering an area of twelve acres. Later it was to be calculated that in that fatal instant, three-and-a-half thousand tons of high-explosive bombs had exploded en masse. In so doing they had claimed sixty-eight lives and posed a number of questions that, in the opinion of many of the local villagers, have never been adequately answered.

The Air Ministry had acquired the long-disused gypsum mines beneath the wooded escarpment of the Stonepit Hills in 1937, as part of the rapidly developing requirement for ammunition storage space. There was much to commend the north-east Staffordshire site. The Fauld mines were 90ft below the surface, and sufficiently capacious to accommodate up to 10,000 tons of high-explosive bombs. There was room for further expansion and, furthermore, they required only the minimum of conversion for their new role. The gypsum deposits had been worked on what miners know as the 'crown and pillar' system, which entails leaving any inferior material undisturbed to form roof supporting pillars. The effect had been to create a spacious cavern the roof of which was supported at approximately 20ft intervals by irregularly shaped 'pillars' of natural gypsum.

The conversion work involved nothing more complicated than the provision of a 2ft 6in thick concrete roof lining, and the erection of a 50ft barrier to isolate the proposed incendiary storage area from the HE store. Finally, the HE store itself was subdivided by a 10ft thick blast wall. A light railway was constructed to provide a link with the main-line at Scropton (approximately a mile to the north), and this facility was extended into the underground storage area where it branched into a system of 'roads', 'shunts' and 'loops' which serviced the individual storage locations. Although the construction work was completed in sufficient time for the scheduled formation of the operating unit on June 1, 1938, the incoming servicemen found themselves under intense pressure to complete the initial stocking process. In the event the transition from peace to war was accomplished without undue difficulty, but, with the German advance through Europe, there were fresh pressures to hold even greater tonnages.

In 1941, a decision was taken to open the hitherto unused parts of the mine to accommodate space for an additional 10,000 tons of HE bombs. To service these areas, a haulage roadway was driven through a massive 200ft pillar of unworked gypsum which was itself to serve as a blast wall between the old and the new areas. Some concern was expressed at the proximity of Ford's, a nearby working mine, to the expanded storage area but, in the opinion of the construction experts, the western wall of the new area (which varied between 15ft-50ft in thickness) constituted an adequate blast barrier, and would afford the Ford's miners protection in the event of an accidental explosion.

The extension — completed in October 1942 — was only one of a number of changes to affect 21 MU as the air war over Europe intensified. Tonnages handled increased dramatically with three additional surface storage sites being opened within a twelve-mile radius of Fauld and a further Field

SITE OF FORD'S WORKS
RAF FAULD
ENTRANCES TO MINE
QUEEN'S PURSE WOOD
HANBURY
SITE OF RESERVOIR
COCK INN
SITE OF UPPER CASTLE HAYES FARM
EXTENT OF UNDERGROUND MINE
CRATER
VILLAGE HALL
HANBURY FIELDS
CROFT FARM
HARE HOLES FARM
CIRCLES AT QUARTER-MILE INTERVALS
An Aerofilms photograph taken June 11, 1963 from 5,280ft.

The narrow-gauge railway line, running from Scropton into the camp, was tarred over in the summer of 1977.

Storage depot was established forty miles away at Loughborough. By mid-1944, as preparations for the Allied landings in Europe moved towards their climax, the monthly total of issues and receipts approached 20,000 tons, all of which had to be double-handled at the Scropton railhead. The unit also had some responsibility for meeting demands from the United States Army Air Force, particularly for 1,000lb HE and 4,000lb High-Capacity HE bombs; the heaviest and most difficult to handle of the many new types of armament stored underground. A detachment of twenty USAAF personnel had been based at Fauld early in 1944 to assist in despatching large consignments to the tactical dumps at Market Stainton, Norton Disney and Brafferton. When, later in the year, the requirement for the 4,000lb HC type crystallised into a regular requirement for 100 bombs per day, still more labour had to be found to supplement the 18 officers, 475 other ranks, and 445 civilians employed at the depot.

A solution to the problem was found at nearby Hilton prisoner-of-war camp. The inmates, all Italian, could be offered employment as co-operators since their country had signed an armistice with the Allies and, by the end of May, one officer and 194 of his compatriots had been found employment above and below ground. Although this was a solution to the physical side of the manpower problem, the same could not be said for the technical problems, the urgency of which had become obscured by the complexities of moving the extra tonnage. There were few amongst the new arrivals who had more than a rudimentary knowledge of the hazards involved in handling explosives and, amongst their superiors, there was a particularly marked shortage of officers possessing the 'X' qualification that would, in normal times, have been an essential pre-requisite for such duties. 'X' qualified officers were the services' explosives specialists and, in 21 MU as in other similar installations, the Chief Equipment Officer (normally holding the rank of Wing Commander), was the senior specialist. It was typical of the situation that, when the senior appointment at Fauld had become vacant in September 1944, no suitable officer could be found to fill it. The temporary incumbent, although 'X' qualified, had therefore to shoulder a workload for which he was not considered entirely suitable. To complicate matters, the depot stocks had by this time become so scattered amongst the various satellites that the Acting CEO was unable to find the time to visit the HE mine more than once a fortnight and, on his own admission, had become progressively less and less familiar with the methods of work there.

The responsibility for the inspection and repair of all stocks rested elsewhere. A team of civilian technicians, employed by the Armaments Inspectorate (AID) and headed by a Chief Examiner, normally worked in small groups comprising an Examiner and a number of viewers. They were the depot's craftsmen, but they too had problems in keeping abreast of the latest developments, regulations and working methods. It was difficult enough for experienced men to keep pace with the bewildering succession of technical instructions, but with the influx of new recruits, particularly at viewer level, it was well nigh impossible. All too often, the hard-pressed Chief Examiners found themselves condoning practices that would in times of peace have merited instant dismissal. And so it was at 21 MU in November 1944. A unit working at full stretch, doing a hard unglamorous job, and apparently doing it well.

To the servicemen and civilians alike, there seemed to be nothing unusual about the morning of November 27. The total issues and receipts for the month was approaching 14,000 tons, but with the hectic days of Overlord behind them, both the Commanding Officer, Group Captain R. J. Storrar, and the OC HE Mine Area had taken a few days leave. The Acting CEO, Squadron Leader Anness, was still wrestling with the problem of finding enough railway trucks for the regular daily consignment of 4,000lb bombs but for the men underground, it was just a matter of routine. One Works Department gang had been sent to empty the drainage sumps in the new area and another to inspect the electric light fittings there. It was a routine day too for

Above: **The destruction caused by the burst reservoir outside one of the rear, emergency exits to the mine (Public Record Office).** *Below:* **The entrance to mineshaft No. 1, photographed in September 1977.**

Above: **The remains of Ford's plaster and cement works. The company's reservoir covered an area of half-an-acre and the tidal wave swept through Queen's Purse Wood demolishing the works (Burton Mail).** *Below:* **Today the site has been completely cleared; on the right is the new mine works of British Gypsum Ltd.**

the AID men and the servicemen detailed to assist them. 'The same old job', was how one of the armourers described it; one team was to inspect a consignment of No. 28 Pistols and, for the team in the new area, it was to be the 'jettisons' on Shunt No. 26.

Whenever bombs jettisoned from an Allied aircraft were recovered, regulations required that they be returned to a Maintenance Unit for repair and re-issue. In theory, all such returns were inspected upon receipt at Scropton, but, in practice, this amounted to no more than a cursory inspection to detect cracked cases. This Monday's consignment, of three 1,000lb Medium Capacity HE bombs returned from RAF West Freugh, was already stacked as part of a row of eight bombs. Any broken suspension lugs or bases could be repaired in situ but, if the AID inspection revealed any signs of internal damage such as a ruptured CE Exploder (the intermediate charge between the detonator and the main filling), the bomb would have to be removed to an isolated cavern — the 'exploder bay' — for repair.

The explosion occurred at 11.10 a.m. The first shock felt by the armourer, who had just left the team in the new area and had just reached the old mine, was little more than a sharp crack. Then came a long drawn out explosion with a violent blast that hurled all who stood in its path to the ground. In the moments of confusion that followed, although none of those left alive in the pitch blackness of the shattered workings could have had a clear idea of what had happened, the implication must have been clear to them all.

One hundred feet above them, the entire surrounding area had been transformed into a battlefield-like shambles. Eye-witnesses from Hanbury and Tutbury villages tell of two distinct explosions and a searing blast. As the ground beneath their feet heaved, as if in the throes of an earthquake, a mushroom-shaped cloud billowed above the site of Upper Castle Hayes Farm. Seconds later, as debris began to fall on them from a height estimated to be in the region of two thousand feet, they flung themselves to the ground to avoid the lethal hail of earth and stone.

Until that moment, nobody had given much thought to the reservoir which served the plaster and cement works of Peter Ford Ltd, lying to the north in Queen's Purse wood. Two hundred yards from the centre of the explosion there was a 30ft-high dam, 35ft wide at its base and 14ft at the top, which retained an artificial lake, covering an area of half an acre, with a depth of between 25ft-30ft. The water stored there was used when the gypsum was converted into plasterboard. The dam, literally distorted in the upheaval that accompanied the explosion, crumbled and released the contents of the reservoir which swept in a torrent two hundred yards towards the gypsum works. The flood, dragging with it thousands of tons of glutinous mud, trees and boulders, swept over the unsuspecting Goodwins in their motor-car and went on to destroy Ford's works buildings, burying the occupants as it did so.

Although a stack of incendiaries blazed fiercely at the tunnel entrance, the camp and administrative buildings had escaped serious damage, and it was from there that the Acting CO, Wing Commander D. N. Kings, on attachment from 42 Group, led the rescue attempts. Assisted by Flight Lieutenant J. P. Lewin and a civilian foreman Mr. J. C. Salt, he made repeated attempts to reach those still trapped below ground but, hampered by a lack of information on where they had been working, the task was a difficult one. To add to the problem, there were no emergency handlamps or breathing apparatus readily available, and there were soon signs that deadly carbon monoxide gas was accumulating in the undamaged areas. The National Fire Service units which had sped to the scene were soon compelled to withdraw their men from the tunnels, and an urgent call went out for specialists from the Mines Rescue Service more accustomed to working in such difficult conditions. However, even the experts found the conditions hazardous and one of their men was lost, overcome by fumes, as he searched for survivors.

There was gas too in the neighbouring working mine, where twenty-four of Ford's men had been trapped at depths of up to 160ft below ground. In the first instance, they had been saved by the strength of the blast wall but, as they made their way towards the shaft where rescuers awaited them, the gas with its characteristic burnt sugar taint claimed the lives of five of their number.

As the number of rescuers increased with

Left: **Another view of Peter Ford's works (Burton Mail).** *Above:* **This area is now being used as a council rubbish tip.**

the arrival of Bomb Disposal Units and working parties from nearby camps, some sense of order gradually began to emerge and with it a realisation of the full extent of the effects of the blast. The destruction at the centre of the devastated area had been absolute. The explosion had destroyed three and a half thousand tons of bombs; all evidently exploded below ground as the bomb disposal teams combing the area found no trace of any having exploded in the surrounding countryside. In fact, only one unexploded 250-pounder was found amongst the hundreds of secondary craters, all of which were attributed to falling debris.

Parts of the Castle Hayes Pillar had vanished completely and directly above the new area there was an 80ft-deep crater measuring 915ft by 720ft. Within a radius of 1,420 yards there had been extensive damage, while inside an inner 1,200 yards radius the terrain, pockmarked by craters and damaged by over a million tons of falling debris, resembled a World War I battlefield. There was no trace of Upper Castle Hayes Farm and so complete was the change in the landscape that no one could accurately pinpoint the site. Three other farms, Hanbury Fields, Hare Holes and Croft had been extensively damaged; a dutch barn and cattle sheds at Stalfords buildings flattened and, throughout the affected area, a total of two hundred cattle had been killed. In Hanbury village, where few buildings had escaped the blast, the Cock Inn and the village hall had been damaged beyond repair and the earth tremor had displaced the upper section of the church tower. Both Hanbury and Tutbury villages had suffered a complete breakdown in public services. Water mains had been shattered, telephones put out of action and overhead power-lines brought down by falling debris. Neither were the effects purely local; the explosion had been heard and the tremor felt at distances of over fifty miles and, at Burton-on-Trent five miles away, there were reports of minor, structural damage to about a hundred and fifty older-type houses.

The explosion had killed sixty-eight persons and injured a further twenty-two. Twenty-six had died at 21 MU including all of those working in the new area with six Italians and a member of the Mines Rescue Service. In addition to the five Ford's employees who had died in the gas-filled mine, another twenty-seven of their men had been killed in the surface buildings. Nearby at Purse Cottages, two civilians had been killed by the flood. Five farm workers and members of their families had vanished without trace at Upper Castle Hayes Farm and another had been killed in the fallen buildings at Stalfords.

It was six weeks before the last five bodies were recovered from beneath the tons of sludge that had engulfed Ford's skid shop, by which time the villagers, who had lost so much in the accident, were clamouring for some form of official explanation. Some were even prepared to believe the German propaganda boasts that the explosion had been the work of saboteurs, particularly as there had been an escape by four German POWs on November 26, and there was much talk of at least one spy having been seen in the locality. There were other rumours too. There had been an ill-founded suggestion that 'somebody' had seen three aircraft diving over Hanbury just before the explosion and another that there had been some form of mishap with an 'American super-bomb' but, inevitably, it was the presence of the Italians in the HE mine that aroused the most speculation. However, despite Parliamentary questions, no official explanation was forthcoming. At the inquest, the Coroner admitted the possibility of sabotage, either by the Italians or the IRA, or perhaps some freak sympathetic detonation initiated by blasting in Ford's mine or a technical error. However, after a private 'briefing' by the CO and Air Ministry legal experts, the Coroner completely exonerated the 'co-operators' and recorded a verdict of 'Accidental Death caused by an Explosion on Government Property', that did little to satisfy public indignation.

It was left to the Services' own Court of Enquiry (under the presidency of Air Vice-Marshal A. Lees CB, CBE, DSO) to examine the available evidence in more detail. Although the possibility of sabotage was never entirely ruled out, clearly the members of the Court afforded it only scant attention. In fact the evidence of the Air Ministry police seems to have been less than satisfactory. It transpired that they operated no form of check on persons entering the tunnels, other than the customary searches for contraband smoking materials but, as the evidence unfolded before the Court, so the enquiries narrowed to the more possible forms of technical error.

Eventually the Court decided that the most likely cause was a combination of ignorance and disregard of the regulations by the AID men and armourers inspecting the jettisoned 1,000 pounders. The armourer, who had such a narrow escape as he left the new area, testified that, just before the explosion, he had seen one of his colleagues using a brass chisel to remove a broken exploder from one of the bombs in the stack. Other witnesses confirmed that such irregularities were by no means uncommon and the Court was told of the discovery of at least one exploder found lying alongside a partially-dismantled bomb in one of the undamaged storage areas. To make matters worse, it emerged that the senior AID inspectors had not kept either their subordinates or armourers working with them fully informed on the 'Standards of Sensitivity' for the explosives with which they were working. Had they done so, then the servicemen would have known that the use of brass tools was expressly forbidden when working on exploders as the constituents were particularly sensitive to that metal. The normally safe exploder could therefore have been ignited as it was being removed which would, in turn, have set off the cast TNT main filling. The shock-wave thus released in the confined space would have been more than sufficient to initiate the explosion of the total stock.

In presenting its findings, the Court reported that it had found evidence of negligence on the part of those who had the responsibility for maintaining safe working conditions underground. The convening officer, Air Marshal Sir Grahame Donald KCB, AOC-in-C Maintenance Command, did not dissent, although he accepted that there might be some mitigating circumstances. Staffing was, he considered, barely sufficient to provide adequate control and Fauld, like everywhere else in the United Kingdom, had to be regarded as part of a war zone in which the man on the spot might often have to sanction departures from normal practice to satisfy operational requirements.

For the officers and men who had led the rescue attempts, however, there were awards: George Medals for Wing Commander Kings, Flight Lieutenant Lewin and Foreman of Stores Salt; British Empire Medals for a corporal and two civilian workers and a commendation for a welfare assistant, Mrs. M. E. Degg.

Long before the official enquiries were completed, experts examining the remaining storage areas at Fauld reported that disruption of the rock structure was so severe that the remaining stocks would have to be removed. The task, which began in January 1945 under the supervision of Dr. Rotter, Director of Explosives Research at the Royal Arsenal Woolwich, entailed the evacuation of a total of 15,000 tons of small-arms ammunition and HE Bombs to emergency stores at the RAF Stations at Church Broughton and Tattenhill. It was hazardous work which, all too frequently, was brought to a halt whilst structural problems were overcome but finally, the last bomb was removed on November 27, 1945 — the first anniversary of the explosion. Throughout this period the ground-level sites continued to function normally and continued to do so until the last of their stocks were either exhausted or redeployed elsewhere.

No. 21 MU was formally disbanded on April 15, 1966. In the intervening years, much had been done at Fauld to reinstate the landscape but the crater still remains. When France pulled out of NATO, necessitating the removal of American war stores from that country, RAF Fauld was taken over by the US Army for ordnance storage in 1967. Over the next six years, up to 40,000 tons of explosives

were stored in the mine, transferred around 1973 to an undisclosed site in Wales. At the present time, the Ministry of Defence has retained the site on a 'care and maintenance' basis, and it is believed that elements of the Royal Navy and Marines presently occupy the camp.

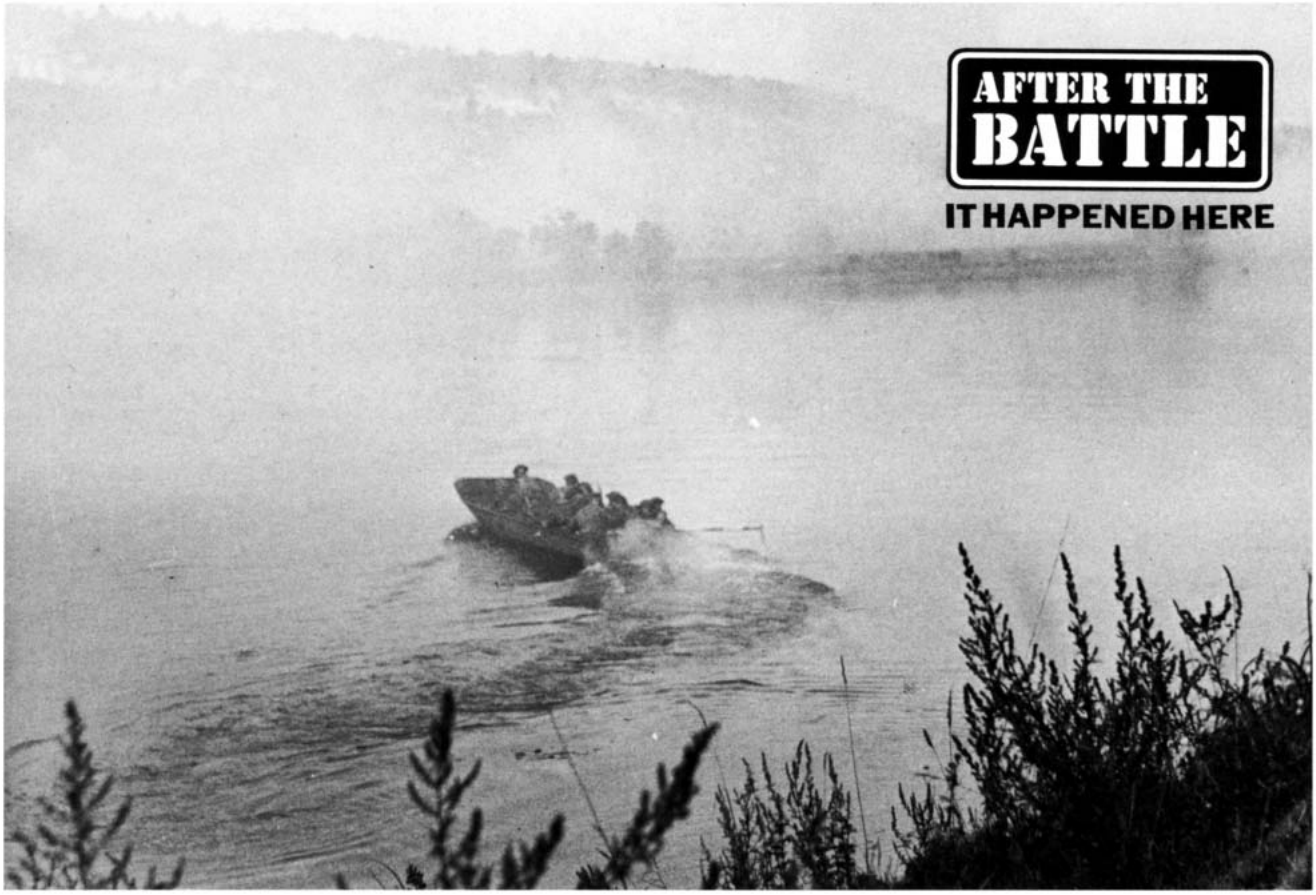
Peter Ford's plasterboard works were never rebuilt and the gypsum mine, presently worked by BPB Industries Ltd, is the largest in Europe. The whole landscape north of the crater remains a wilderness although part has been used since 1973 by Staffordshire County Council for refuse dumping. The council did try to get permission from the Ministry of Defence to tip household waste in the crater itself (which it is estimated could hold twenty years' rubbish!) but objections were raised by the relatives of those whose bodies were never recovered. The posts from the sluice gates for the old Ford reservoir can still be seen on the hillside as can odd pieces of brickwork and narrow-gauge railway track. Although we could not gain admittance to the RAF Camp, the two rear emergency exits to the present RAF Fauld mine can be seen close to the modern BPB works buildings.

The villagers have never received the explanation that they feel they are owed. Official comment is that it is not the practice to divulge the proceedings of Courts of Enquiry. To some, and to the Earl of Harrowby who raised the case in the House of Lords, it is still suspected that some form of cover-up took place. The 'American Connection', although having no bearing on the original cause of the explosion, has done little to allay the suspicions of the villagers. The truth is, perhaps, less sinister but the crater and the distorted hillside at Fauld survive today as a permanent reminder of what it meant to one small village to have been part of a war zone.

Above: **The remains of Hanbury village hall and** *(below)* **its present-day replacement. The tree makes rather a nice comparison today.**

Above: **An illustration of the hazards facing Dr. Rotter's clearance teams — 250lb HE bombs and boxes of small anti-personnel bombs (Public Record Office).**

Left: **Damage to the Cock Inn at Hanbury nearly half-a-mile from the crater (Burton Mail).** *Above:* **The pub was so badly damaged it had to be completely rebuilt a few yards behind the original site.**



CROSSING THE SEINE AT VERNON

By August 22, 1944, German resistance in the Falaise pocket had ended. About 70,000 German troops had been killed or captured and those that had been successful in escaping from the gap were now in full retreat across the River Seine. The US 79th Division had reached the river and established a bridgehead at Mantes Gassicourt. This they were steadily enlarging, despite the frantic efforts of the Germans to reduce it. Advancing on Paris from the south, the French Second Armoured Division and American infantry were meeting only slight resistance while, in the capital itself, citizens, members of the Resistance Movement and gendarmes were fighting pitched battles with the Germans. Paris was finally liberated on August 25, and the city wildly celebrated the end of its four-and-a-half years of German occupation.

Meanwhile, the Second British Army, with XXX Corps on the right and XII Corps on the left, were rapidly advancing towards the Seine at Vernon which lies some seventy miles from Le Havre at the estuary. The 43rd Wessex Division was given the task of being the first British Division to assault the Seine, and reconnaissance parties dashed forward to Vernon. They were temporarily delayed by a bridge over the River Eure at Pacy, which the Germans had blown. A forward Royal Engineers officer had discovered, further, that it was mined, blocked and booby-trapped, and that the only troops in the vicinity consisted of one solitary US Military Policeman! Royal Engineers from 260 and 553 Field Companies, escorted by a troop of the 43rd Reconnaissance Regiment, moved forward to bridge the gap and clear the mines. They found that, beyond the river bridge, the crossing of the road over the railway was also demolished.

Top: **Under cover of a smoke screen, a stormboat carries men of the Wiltshire Regiment (possibly the 5th Battalion in the first wave) to the east bank of the Seine on the evening of August 25, 1944 (IWM).** *Above:* **The river at peace August 24, 1977.**

At this stage a party of US Engineers arrived from the far bank, also with orders to bridge the Eure, with a wooden trestle bridge, but an international compromise was reached and XXX Corps Royal Engineers built the river bridge, while the Americans bulldozed a crossing over the railway through the station yard. In the early hours of August 25, the leading troops of 129 Infantry Brigade entered Vernon without incident.

The pleasant, straggling town of Vernon lies extended along the western bank of the River Seine, the woods and buildings giving a good covered approach to the river. On the other side of the river, opposite the town on a narrow strip of flat ground is the village of Vernonette. Immediately behind, and on either side of Vernonette, the ground rises in an escarpment which completely dominates the river and both banks. The upper parts of the escarpment are covered with woods which extend eastwards from the river for about five miles.

The Germans on the far bank had been accustomed for some days to the presence in Vernon of elements of US Reconnaissance units. As far as was known, they were not anticipating any attack and, in order that

Above: **Sergeant Lawrie photographed a Cromwell firing at a target across the river at 7.00 a.m. on the day after the assaults (IWM).**

Below: **We found the photograph had been taken outside No 149 on the Avenue de Paris, as indicated on the map opposite.**

Left and above: **Tommies, waiting for their turn to cross the river, seated by the signpost just visible in the photo at the top of the page (IWM).**

surprise should be complete, strict orders were issued by Major-General G. J. Thomas, that no British uniform or British steel helmet was to be seen on the river bank prior to the assault. These limitations did not in any way prevent a most detailed reconnaissance being carried out by all branches of the 43rd Division. During the afternoon, a complete machine gun company of the Middlesex Regiment was brought into position in rooms overlooking the river bank. A squadron of the 15th/19th Hussars fixed positions near the bank for their guns and Besas. Observation posts were occupied by the gunners, assembly areas for boats, rafting gear, and assaulting battalions, were reconnoitred and sign posted.

The operation was planned for the night of the 25th, the speed of the attack being intended to prevent the Germans from reinforcing their defences. The assault was to be mounted by the 4th Somersets and the 4th and 5th Battalions of the Wiltshire Regiment. An intense ten-minute barrage was put down against all the known enemy positions on the cliff-like opposite bank and, at 7.00 p.m. under cover of a smoke screen and only two hours after arriving in their operational area, the assaulting troops were launched.

The crossing was a hazardous one, for the German gunners had full observation and, moreover, the banks were steep and muddy. A large number of weeds fouled the propellers of the leading stormboats, exposing the men to the heavy fire of the enemy. The 4th Battalion, the Somerset Light Infantry, landed on what was in effect an island as a wide watercourse, which had been thought to be dry, proved to be filled with water, and was consequently impassable. The troops of the battalion were, later, re-embarked. The 5th Battalion, the Wiltshire Regiment, was landed with difficulty upstream of the town, and was counter-attacked when only one company was across. However, the remainder of the battalion got over in the early hours of the morning, and were joined at first light by the 1st Battalion of the Worcestershire Regiment, which crossed dryshod by the demolished road bridge and advanced towards Vernonette.

During the morning, in order to create doubts in the mind of the German Commander as to the exact location of the main crossing places, two ruses were used. Ostentatious registration by the Royal Artillery with high explosive and smoke was carried out up and down the river, and a small party, consisiting of one 25-pounder with 100 rounds of smoke, a 3-inch Mortar, and a carrier section, was sent out to go some fifteen miles downstream and simulate a landing opposite Gaillon.

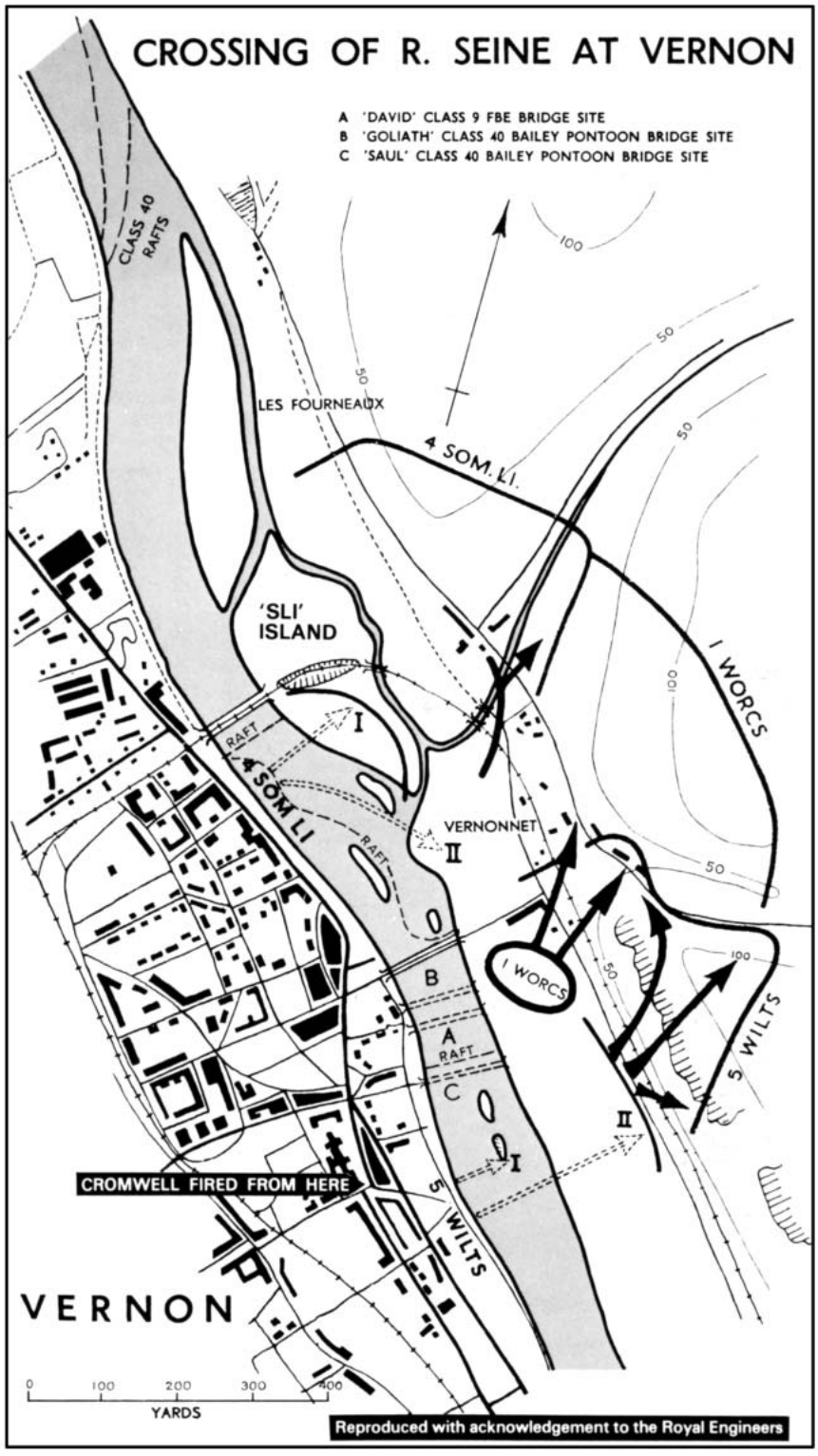
At midday, the 4th Battalion, the Wiltshire Regiment, also crossed. By this time enemy opposition was being overcome, and 43rd Divisional Royal Engineers had assembled DAVID, a Class 9 folding-boat bridge, but all their efforts to swing it across the river were frustrated by machine gun fire from the far bank. Anti-tank gunners and lighter vehicles were ferried across the river using thirty-four close support rafts built by 15 (Kent) GHQ Engineers in spite of the enemy fire.

The Royal Engineers completed the construction of this 680-foot folding-boat bridge by 5.30 p.m., and reinforcements with vehicles and Bren carriers crossed immediately. The bridgehead was now firmly secured and, by nightfall, covered an area 1,000 yards deep and 5,000 yards wide. Work was now started on a 694-foot Class 40 bridge, GOLIATH, but considerable inconvenience was caused by the breaching of a dam by the Germans downstream, which casued the level of the river to fall by six feet. No 73 Field Company built from the near bank, 71 Field Company from the far bank whilst 72 Field Company launched the pontoons and built the floating bays.

A Class 40 tank ferry was built during the night and, at 7.00 a.m. on the 27th, the first tanks of the 4th/7th Dragoon Guards, of the 8th Armoured Brigade, crossed the river. Probably the first British tank over the Seine was that of a troop leader, Lieutenant Trasenster. The journey across was made without incident but, on reaching the far bank, the ground was found to be much softer than had been expected and the tank was quickly bogged. The infantry battalions which had formed the bridgehead were waiting for tanks to get across, for German counter-attacks were being put in and the one bogged tank did not arouse their enthusiasm. However, a few more tanks of the Squadron were ferried across before the exit had to be resited because of the mud. At 7.00 p.m., GOLIATH, the Class 40 Bailey bridge, was completed after twenty-eight hours work — the REs had suffered twenty casualties during its construction.

Meanwhile, the Germans were making counter-attacks on the men of the Wessex Division. The 1st Battalion, The Worcestershire Regiment, while advancing up the main road, was strongly counter-attacked and driven back. Major Benn, the 2i/c, lost his life while rallying the leading troops. Major Algy Grubb and Captain Noel Watkins massed all available Bren guns and the counter-attack was finally beaten off, but it had been an awkward moment.

At the same time the 7th Battalion, The Somerset Light Infantry, had an isolated company surprised and destroyed in the

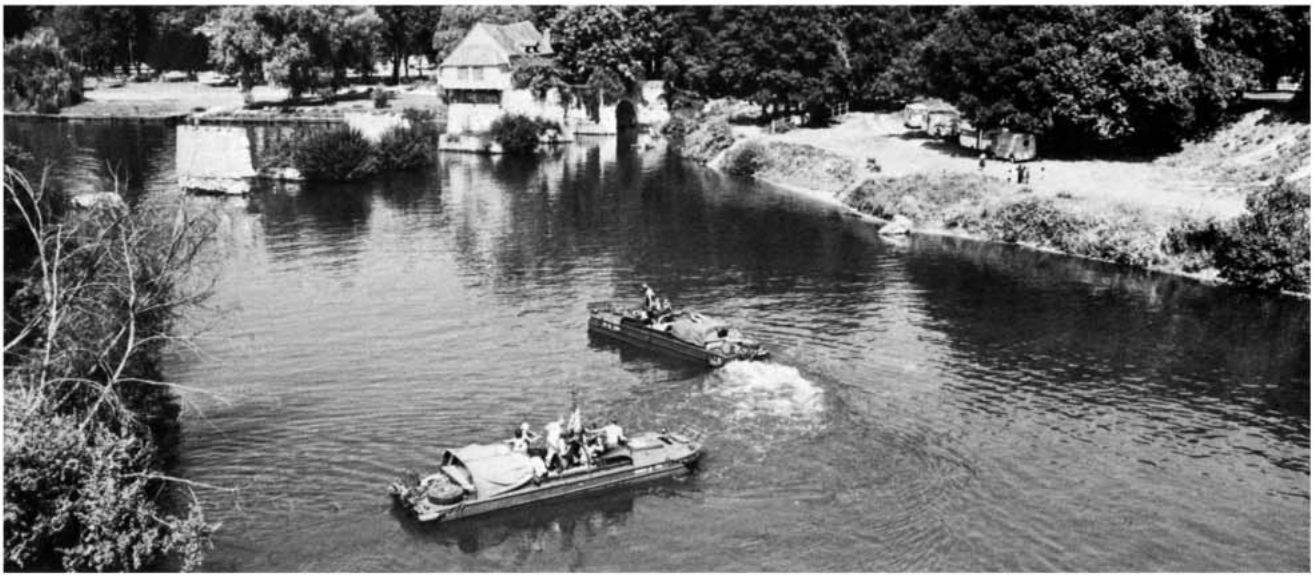


Left: A platoon of Royal Engineers marches along Rue Carnot to the river to prepare the stormboats for the crossing (IWM). *Above:* The restaurant, Les Fleurs, is still in business on this quiet Vernon street.

Left: One of the stormboats being manhandled to the river by 15 (Kent) GHQ Troops Engineers on the afternoon of August 25 (IWM). *Above:* The same spot in Rue de la Gravelle, thirty-two years later.

Left: The Engineers can be seen approaching the river with the boat (IWM). *Above:* The photo was taken from the Boulevard Marechal Leclerc — the Marie building is on the left.

Left: Meanwhile, the assault troops make their way to the boats (IWM). *Above:* The same small alley still exists beside the hospital.



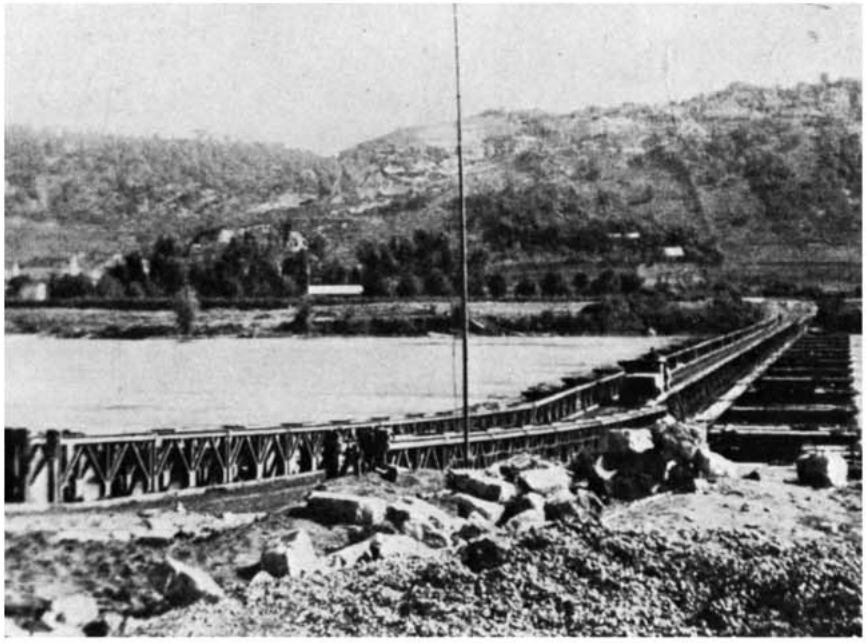
Perhaps the most striking comparison we have printed in After the Battle magazine, only made possible by the presence of the 1976 MVCG tour in Vernon during the research for this story. We appreciated the co-operation of the crews and the initial difficulties of launching the DUKWs in the river. They can derive a little comfort from the report by Colonel L. R. E. Fayle, CRE 15 (Kent) GHQ Troops Engineers, written after the actual operation: 'The DUKWs had been a flop, as I expected, as exits and entrances to the river were hopeless and would have required a major engineer effort to make them passable'!

Left: **Sappers of 49 Division bring the first bulldozer to the east bank on a Class 9 raft (IWM).** *Above:* **The old raft site was situated just downstream from the road bridge.**

Left: **The Class 9 folding-boat bridge, DAVID (IWM).** *Above:* **An MVCG DUKW proceeding downstream at the same spot.**

Left and above: **A censored photograph showing Brigadier B. C. Davey, Chief Engineer XXX Corps (centre), supervising the construction of GOLIATH, a Class 40 Bailey pontoon (IWM).**

Left and above: **Another photograph showing the marks of wartime censorship of armour rolling east over GOLIATH opened at 7.45 p.m. on August 27. DAVID Class 9 bridge in the background (IWM).**



Above: **SAUL, the second Class 40 Bailey built by 15 (Kent) GHQ Troops Engineers and** *(above right)* **the site today.**

forest. On the left of the bridgehead, the 5th Battalion, The Duke of Cornwall's Light Infantry had a platoon over-run in a night attack. When Major Parker, of 'A' Company was in danger of a similar fate, he brought down the fire of the divisional artillery on to his own position and company headquarters, and broke up the attack.

By the 28th, the bridgehead had been extended to a depth of four-and-a-half miles and, at 8.00 a.m., work was started on a second Class 40 Bailey Pontoon bridge SAUL, upstream from GOLIATH. Now the men who were to exploit the first major British river crossing in France began to assemble. The leading troops of the 11th Armoured Division were already in the neighbourhood of Vernon and the 50th Division had arrived south-west of the town.

SAUL, 736-foot long, which had been built by 582, 583 and 584 Field Companies in twenty-eight hours, was opened to traffic at mid-day on August 29 and it was crossed later in the day by the Guards Armoured Division, then under the command of XXX Corps. The Rampant Boar, famed insignia of the Corps, was now really on the move on a route which was to end seven months later in northern Germany.

The first unsuccessful launching site for the MVCG DUKWs was downstream from Vernon, not far from where the Class 40 tank rafts operated thirty-odd years before. Photograph shows a DUKW being winched ashore.

The routing of the 1976 Military Vehicle Conservation Tour to Paris through Vernon gave us a perfect opportunity to take our comparison photographs using some of the hundred-odd vehicles in the convoy as authentic props. As arrangements were also to be made to test the DUKWs on the tour for their 'riverworthyness' prior to their voyage on the Seine in Paris, this gave us the opportunity to photograph these vehicles in the water at Vernon. This must have been a unique occasion for it is unlikely that any DUKWs have crossed the river at Vernon since the 43rd Division operation in August 1944. Also, as we were in Vernon on August 23/24, it was

Left: **The 'Boss' himself crosses the Seine via GOLIATH on September 1. The original stone road bridge, demolished in 1940, which had been temporarily repaired by the Germans, was blown up by the FFI on August 18, 1944 (IWM).** *Above:* **Vehicles of the MVCG on the old approach road, three decades later.**

Above: British 17-pdr anti-tank guns turn down the Rue de la Boucherie from the Rue Carnot on their way to GOLIATH (IWM).

Above: Like most of Vernon, this corner seems timeless—only the fashions change.

Almost a scene from the past as the tour vehicles cross the rebuilt road bridge to continue their journey to Paris.

Left: Infantry moving through Vernon along Rue D'Abuféra crossing the Rue de Madeleine. Note the tactical sign obliterated by the censor (IWM). *Above:* The road was closed in 1951 when the railway was electrified.

Left: **Germans captured during the assault are marched back up the main street of Vernon (IWM).** *Above:* **The same shop, now selling antiques.**

almost exactly thirty-two years later to the actual day.

Attempts were made to launch the DUKWs from the west bank of the river upstream from the town but, in the absence of Royal Engineers to bulldoze a slipway, the operation proved abortive. One vehicle did manage to negotiate the four foot bank but had great difficulty in emerging again and, in the end, had to be towed out. However later on, successful launches were made from a slipway within the Vernon itself and we were able to take excellent shots from the rebuilt road bridge of DUKWs in exactly the same place as those on ferrying duties in 1944.

The road bridge had been blown up by the FFI during the night of August 18/19, 1944 to delay the German retreat but has now been reconstructed on the same site as before. The old approach road to GOLIATH still remains, this being the bridge by which General Montgomery crossed the river in his Humber staff car on September 1, 1944.

The XXX Corps route from Normandy to Bremerhaven in Germany was called Club Route after the distinguishing 'Ace of Clubs' signs which lined its roads. This ran through Amiens, Arras, Tournai, Brussels, Hechtel, Nijmegan, Cleve, Minden and Bremen. When the Corps rear echelon reached the Rhine, a large bronze boar, identical to the XXX Corps flash except that it was resting not rampant, was spotted in the garden of a villa, reputedly belonging to a German industrialist. Thinking that it would be an excellent, symbolic memorial to be set up in the Corps final resting place in Germany, it was 'liberated' and placed in its own trailer under the personal care of a sergeant. The statue had suffered battle damage and its lower jaw and one tusk were missing and it had many small holes in its body. However one of the Corps workshops carried out a skilful job of plastic surgery and, on December 15, 1945, on the eve of relinquishing command of the Corps, Lieutenant-General Brian Horrocks ceremoniously unveiled the 'Boar at rest' outside XXX Corps HQ in Nienburg. It had been mounted on a specially-constructed stone plinth (the design of which had been the subject of a competition) on which were engraved the battle honours of XXX Corps. There is rested for many years in the centre of British-controlled Germany. When British troops were due to leave the area, it was felt the continued existence of the memorial would not be appreciated by the townspeople and it was dismantled by 17 Field Squadron, RE, and re-erected just inside the entrance to the Staff College at Camberley in December 1958 where it can be seen today.

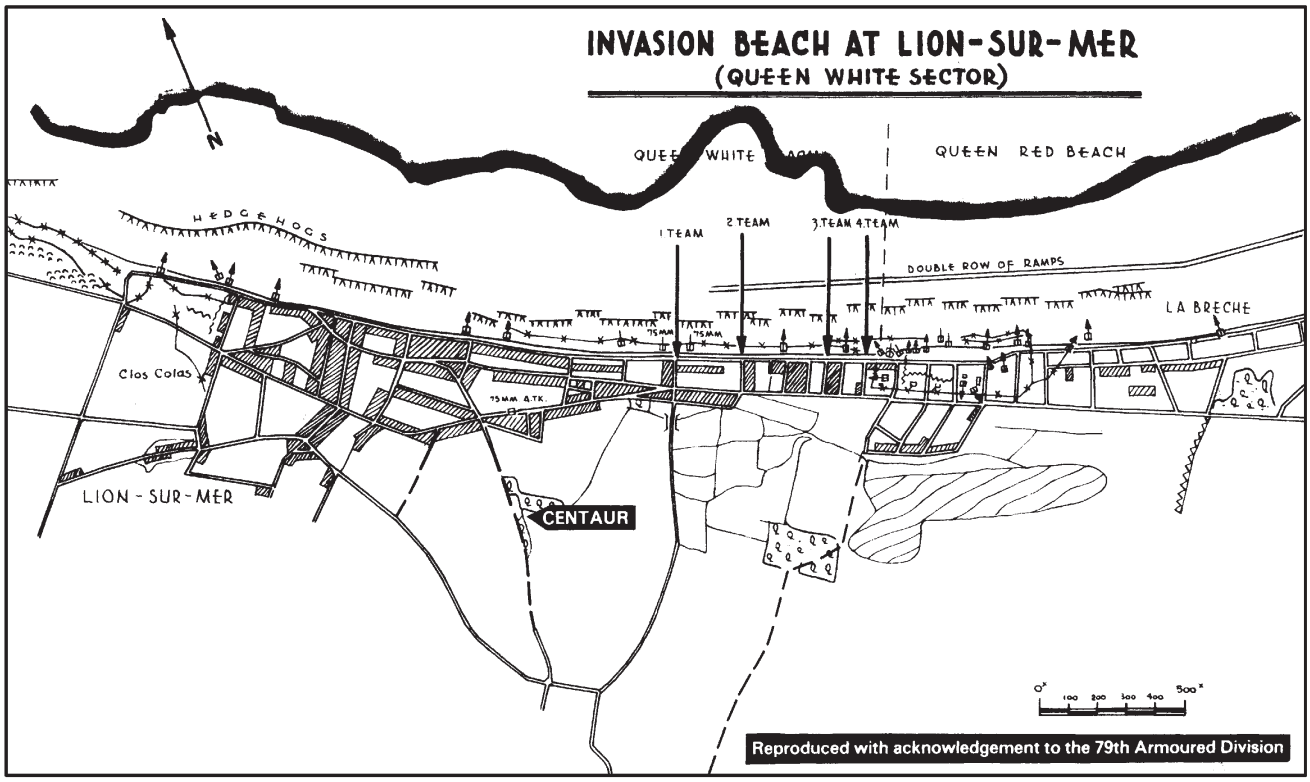
Centre: **The XXX Corps Boar at rest outside the Corps HQ in Nienburg, Germany.** *Right:* **The editor found the Boar — now sleeping peacefully — just inside the entrance to the Staff College, Camberley where it was moved in 1958.**

RMASC Centaur

Normandy remains one of the most-visited Second War battle sites in Europe and D-Day, because of its truly international make up, remains a nostalgic memory for many veterans, be they Americans, British, Canadian, French or German. With such tourist activity, it would seem almost impossible for any worthwhile relics of the battle to remain in situ today. What was not recovered by the armies at the time was salvaged later by scrap metal dealers eager to make their post-war fortunes. Nevertheless one of the last armoured relics, which had managed to remain more or less intact for over thirty years on the spot where it was disabled on June 6, 1944, was a Centaur tank from the Royal Marine Armoured Support Group which landed near Hermanville la Breche.

On D-Day, the Royal Marine Armoured Support Group consisted of two Regiments (the 1st attached to the British 50th Division and the 2nd to the 3rd Canadian Division) and one Independant Battery under the British 3rd Division. Equipped with twenty Shermans and eight Centaur Mk IVs (similar to the Cromwell but fitted with a 95mm gun-howitzer, with an outdated 12-cylinder Morris Liberty Engine from the 1920s), the task of the Group was to give support in the early stages of the landing before the arrival of normal field artillery. The Group would also fire at any targets which presented themselves during the run in and also operate for a limited period with the self-propelled artillery. Because of the absence of an administrative and maintenance organisation, the Group was not expected to operate more than a mile from the beach although, in the event, it stayed in action for fifteen days and operated up to ten miles inland.

Within fifteen minutes of H-Hour, twenty Centaurs were ashore and a further twenty-



eight by H+4 hours. The 5th Independent Battery was commanded by Major Robert J. Freeman and it landed on Queen White and Red Beaches between Hermanville la Breche and Lion-sur-Mer. Five hundred yards from the beach, one of the Centaurs from V troop 'Vidette', on coming into contact with the enemy, was reversed up to a hedge where it was hit by mortar fire which set the bins and then the engine compartment on fire. The tank was evacuated and there it remained while the tide of war moved on.

The years rolled by and, perhaps, because it was lying the edge of a small copse, the tank avoided the wholesale clearance of the beachhead wreckage which took place after the war. Its ownership passed to a Caen scrap dealer but in 1972, fearful that it would soon end its days in a smelters pot, Dr. Jean-Pierre Benamou, a dentist from Lille, purchased the hulk on behalf of the Association du Musee de Caen. Dr. Benamou had played on the tank as a boy in the 1950s and had seen it slowly stripped over the years losing nine of its road wheels. The children had even hidden it under hay to keep it from the eyes of scrap dealers!

Early in 1975, Dr. Benamou made contact with Colonel Michael Gray, Commander of 16 Parachute Brigade, in Germany (now Brigadier commanding, 6th Field Force based at Aldershot) to see if the British Army could assist in the recovery of the Centaur and its refurbishment. Colonel Grey, already closely associated with the 6th Airborne Division Museum at Pegasus Bridge, indicated his enthusiasm for the project and a preliminary reconnaissance of the site was carried out in May 1977. The condition of the Centaur, No T185102, was found to be as follows:—

(1) **General.** Fairly heavily rusted, many minor parts missing, some major parts missing, but still basically sound.

(2) **Front.** Driver's window jammed half-open. Track-link holders: three bent, one missing.

(3) **LHS.** Final drive and front idler present. Four out of five road wheels missing. Two hub covers missing. Front access hatch jammed open. Bins destroyed. Track guards destroyed — some mountings present, but bent.

(4) **RHS.** Final drive and front idler present. All five road wheels missing. One hub missing (complete). One hub cover missing. Bins and track guards as for LHS.

(5) **Rear.** Rusty but intact. Shackle still attached to left-hand towing eye. Tactical sign still visible.

(6) **Belly.** Rear LHS blistered from mortar fire.

(7) **Turret.** Machine gun missing. Main armament present and complete, breech block seized open. L/H cupola/hatch: missing. R/H hatch: one door missing, the other jammed open. Interior gutted.

(8) **Engine Compartment.** Two-thirds of decks missing. Filler caps missing. Engine: alloy parts badly corroded, beyond repair. Gearbox may be removable, to ease recovery. Fire damage throughout compartment.

(9) **Tracks.** Present and complete but may be seized to final drives or within limits — this will only become evident on recovery.

It was accepted that complete restoration was practically impossible but, because the tank was probably unique, it was worth restoring to a standard comparable to that of other tanks on display in the area. It was decided that the following work would therefore be necessary:-

Manufacture/acquire nine new road wheels.
(It was believed that the old wheels might 'appear' when recovery was seen, by the local population, to be taking place. Centurion wheels, which would be of the same dimensions, could be used instead but the mounting holes would require welding up then re-drilling as there are a different number).

Above: **The Centaur, looking out over the beach-head battlefield, photographed in September 1944.** *Below:* **Jean-Pierre Benamou at the 'wheel' in 1961 (all photos from the Association du Musee de Caen 1944 et la Bataille de Normandie).**

Below: **The Centaur before its removal in November 1975.**

Manufacture/acquire one new hub (complete).
Manufacture/acquire three new hub covers.
Manufacture/acquire new cupola/hatch.
Manufacture new half-door for R/H turret hatch.
Manufacture new rear decks.
Cut free, then weld down, jammed hatches.
De-rust and re-paint.

Subsequent to consideration of the reconnaissance report, a plan of action was agreed and 'Exercise Veterans Revival III' was drafted as a training operation.

A recovery team from 7 Field Workshop, REME, left BAOR at Fallingbostel on November 3, 1975 and arrived on site in Normandy early on November 5. The recovery of the Centaur was not as simple as had been originally estimated as both tracks were found to be completely seized due to rust and the growth of a tree into one of the tracks to a depth of three inches which had been invisible during the early inspection. When the tank was finally towed from its thirty-year resting place, a 4ft by 2ft strip of the tree came away with it!

Above: **Fixing the cables to one of the two AEC recovery vehicles used to shift the Centaur.** *Below:* **The team from 7 Field Workshops, REME.**

Below: **The restored tank at 60 Station Workshop at Antwerp before adding the fittings and tactical signs.**

The team were also collecting a White half-track, ex-French Army, from Arromanches for restoration and the two vehicles arrived back in Germany on November 14. The initial assessment of the cost of refurbishing the vehicles including refabricating missing parts was £4,247 for the half-track and £16,636 for the Centaur and obviously it was out of the question, in the current economic squeeze, to expect the Army to foot the bill. The average British taxpayer would naturally be critical of such a sum being spent and it was obvious that a request to the Ministry of Defence for allocation of funds would be rejected. It was therefore decided to move the vehicles to 60 Station Workshop in Antwerp where voluntary help in the required proportion was available.

The restoration extended over the following twelve months under the supervision of Major Ian Patterson. When the inside was cleared out, an unexploded 4-inch mortar bomb came to light, together with .303 ammunition, greatcoat buttons and some bones although it was not established if these were human or animal. Complete restoration of the interior was impossible so it was therefore decided that the hatches would be spot-welded shut after the engine, gearbox and all other fittings had been removed. However the excellent restoration of the exterior to its D-Day configuration was only possible by the tremendous personal dedication of one man: a Belgian civilian employed at 60 Station Workshop, Mr. K. L. H. Verheyden and General Sir Richard Gale made special mention of his work during the handing over ceremony at Pegasus Bridge on June 12, 1977.

This ceremony was planned to coincide with the unveiling by General Gale of three concrete markers, indicating the spots where the gliders of Major John Howard's coup-de-main party landed on D-Day. It was appropriate that these markers, together with the concrete bases for the Centaur and half-track had been constructed by 2 Troop, 34 Engineer Squadron, RE, under Lieutenant Alan Brown, part of the present day British 3rd Division, to which the Royal Marine Support Group was attached in 1944. The REs also refurbished the German gun emplacement close by the bridge.

The Centaur can now be seen displayed appropriately on a half-section of a Churchill bridge beside the Caen Canal although its final resting place will be in the new Caen Museum when this is established.

Above: **Little is known of the history of the White half-track, unveiled with the Centaur in the garden of the Pegasus Bridge Museum, seen here being examined by Mike Willis of the IWM Photographic Department. Fitted with a reconditioned engine in Munich in 1958, it belonged to M. Carpentier and was removed from the garden of the Villa d'Arromanches where it had lain since June 1974 (R. Coombs).**

Above: **The three markers recording the exact spots where the gliders landed beside the bridge. Rearmost that of Lieutenant R. A. Smith, piloted by Staff Sergeants Parkway and Boyle; centre, the glider of Lieutenant D. D. Wood, piloted by S/Sgts Boland and Hobbs and foreground, the glider of the commander, Major R. J. Howard, piloted by S/Sgts Wallwork and Ainsworth (R. Coombs).**